306

1-203.4
8

TRANSMITTAL OF AMENDMENT TO THE OPERABLE UNIT 1 REMEDIAL DESIGN PRE-FINAL DESIGN PACKAGES I AND II, SITE IMPROVEMENT PLAN, MARCH 1996

06/13/96

DOE-1021-96
DOE-FN EPAS
5024
DESIGN

Department of Energy

Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

JUN 13 1996

DOE-1021-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF AMENDMENT TO THE OPERABLE UNIT 1 REMEDIAL DESIGN PRE-FINAL DESIGN PACKAGES I AND II, SITE IMPROVEMENT PLAN, MARCH 1996

This letter transmits the amendment to the Operable Unit 1 (OU1) Remedial Design Site Improvement Plan as discussed in a meeting on June 11, 1996. The purpose of the amendment is to present revised design plans for activities that support on-site rail improvements and construction of the OU1 plant facility. The implementation of these design modifications will minimize the use of clean site material for OU1 structural fill.

As you are aware, the field activities for the OU1 site improvement plan are ongoing. An expedited review by the U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) prior to July 3, 1996, would provide sufficient time for preparing the stockpile area, installation of stormwater management controls, and would allow for maximum utilization of construction, personnel, and equipment.

As discussed on Page 5 of the enclosed narrative, two locations were included in the Operable Unit 5 (OU5) Remedial Investigation which were above the Waste Acceptance Criteria (WAC) of 1030 ppm (total uranium). Only one of these sample locations falls within the north railyard area. This area will be removed and placed with other soil and debris from the OU1 preparation activities that will be addressed in the OU1 remediation facility.

If you should have any questions, please contact Dave Lojek at (513) 648-3127.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FN:Lojek

Enclosures: As Stated

cc w/encs:

R. L. Nace, EM-423/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
Manager, TPSS/DERR, OEPA-Columbus
T. Schneider, OEPA-Dayton (3 copies of encs.)
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandegrift, ODOH
S. McLellan, PRC
T. Hagen, FERMCO/65-2
J. Harmon, FERMCO/90
AR Coordinator/78

cc w/o encs:

C. Little, FERMCO/2

AMENDMENT TO THE OU1 REMEDIAL DESIGN PRE-FINAL DESIGN PACKAGES, I AND II SITE IMPROVEMENT PLAN MARCH 1996

1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this Amendment to the Operable Unit 1 (OU1) Remedial Design Pre-Final Design Packages, I and II, is to present revised design plans for activities that support on-site rail improvements and construction of the OU1 plant facility. This Amendment affects the Site Improvement Plan portion of the design and includes:

- An explanation for the amendment,
- A description of affected areas, and
- Identification of activities and schedule included in this amendment.

1.2 Explanation for Amendment

The OU1 pre-final design was submitted to U.S. EPA/Ohio EPA in March 1996. The Site Improvement Plan, Description of Site Preparation Activities, was included in the pre-final design submittal. The Site Improvement Plan (SIP) addressed a number of site preparation activities necessary for construction of OU1 remedial facilities and support facilities such as the on-site rail improvements (primarily the north railyard area). The SIP identified a need for approximately 28,000 cubic yards (cyd) of soil borrow for construction of the plant facility; and additional soil borrow required for the on-site rail improvements. The SIP provided a drawing of the borrow area location where this soil borrow was to be obtained.

In the SIP, Description of On-Site Rail Improvements, initial construction activities for the north railyard were identified, including stripping 6 inches of soil from the area (approximately 23 acres) and stockpiling that soil for future OSDF disposal. The SIP also stated that stripping of the area would be required as part of the overall OU5 soil remediation effort; additional soil beyond the 6 inches that needed to be stripped, as a result of real time monitoring would also be stockpiled; and management of the stockpiled material would be described in the Remedial Action Work Plan for the Soil Remediation Project (SRP), Area I, Phase I (RAWP, Area I, Phase I). Construction of the north railyard was to begin in October 1996.

The SIP also stated that drawings, expected to be issued in late March 1996, would update the design relative to value engineering studies. As a result of the value engineering studies, the revised on-site rail improvements design (primarily, the north railyard area) was capable of producing an excess of 23,000 cyd of soil that could be used as fill. With a need of 28,000 cyd of soil borrow required for plant facility construction, a net need of 5,000 cyd of soil borrow is needed for the plant facility site improvement.

Originally, and as indicated to EPA in the OU1 pre-final design package, borrow fill was to be taken from a borrow area located north of Waste Pit 5. Subsequent progress on the engineering design for the proposed north railyard has concluded that there is 5,000 cyd additional soils that may be removed from the area surrounding the railyard. This amount of material would satisfy the need for the plant facility site improvement requirements. Taking this borrow from the railyard area avoids the need to open a new source of borrow material north of Pit 5.

Additionally, it is imperative to continue work in the railyard area to allow continued utilization of equipment (scrapers) which are currently on-site. If the equipment is sent back to the respective owners it may not be available for construction of the railyard this year.

As a result of the excess soil borrow identification and to facilitate ongoing infrastructure development for OU1, OU1 proposes to assume in advance, a portion of the work scheduled for SRP. This work involves:

1) Stripping of the topsoil (i.e., the surficial 6 inches) from the Areas D north and south and B southwest, see attached Figure 2-1.
2) Placement of this topsoil in the stockpile, see attached Area 1 Phase 1 (West) Remedial Action Project plan and detail sheets.
3) Management of runoff from the west and east impacted soil stockpiles.

Accordingly, this amendment revises the original design plan to address:

(1) Construction and handling of the soil stockpile resulting from stripping topsoil from the north railyard area, and
(2) Utilizing excess soil from the north railyard construction for the OU1 plant facility.

2.0 DESCRIPTION OF AFFECTED AREAS

On-site Rail Improvement

The on-site rail improvement consists of the construction of a railyard, rail spurs and wyes, concrete waste loadout facility with a 200 ton track scale, and associated civil upgrades. The civil upgrades consist of a sedimentation basin, ditches, culverts and a new gravel access road connecting to the old north construction access road just north of the Fire Training Facility. See "Site Rail System Improvements Grading and Drainage Package" (attached), Certified for Construction 30 May 1996, for rail location and grading. The most substantial part of the rail improvement work is for the railyard, which will temporarily stores empty and full railcars. The new railyard will be built northeast of the former production area and will consist of a series of 11 parallel tracks, varying in length, for a total of 11,700 lineal feet of storage track. This area is referred to as Areas D north and south in the RAWP for the Soil Remediation Project, Area I, Phase I, see Figure 2-1. Area B southwest lies to the east of Areas D north and south and is also a part of the OU2 project. A total of 23 acres will be stripped to a depth of 6 inches in areas D north and south and B southwest, creating 22,000 cyd of potentially contaminated topsoil material and small quantities of asphalt. This topsoil will be stockpiled as provided in Section 3.0.

Stockpile/Sedimentation Basin

The soil stockpile [Area 1 Phase 1 (West) Remedial Action Project] will be located approximately 300 feet due south of Area B southwest and west of the existing FEMP north access road. The stockpile and its connecting runoff control basin are being designed by SRP personnel and will be constructed by OU1. See the attached Area 1 Phase 1 (West) detail sheets for the stockpile and sedimentation basin layout and design. The stockpile will drain naturally to the south utilizing existing ditches to the east and a berm to the west to catch and divert all runoff to the sedimentation basin. The stockpile will be sprayed by water or a surfactant to control dust emissions during construction. Upon completion, the stockpile will be seeded and mulched for permanent dust suppression.

The sedimentation basin is directly south of the proposed west impacted soil stockpile. The sedimentation basin was designed to retain runoff from a 10 year/24 hour storm (the

same criteria as the site Stormwater Retention Basin (SWRB)). The basin will receive flows initially from the above stockpile. Later, when the Soil Remediation Project constructs the East Impacted Soil Stockpile (just due east of the west stockpile), the basin will receive flows from both stockpiles. The Area 1 Phase 1 (East) Remedial Action Project drawings are not attached, however they will be submitted as part of the SRP RAWP, Area I, Phase I. The basin has interior slopes of 2.5:1, exterior slopes of 2:1, and an average depth of 4 feet. The basin will have an 18 inch corrugated metal riser pipe leading into a 12 inch, 0.6 % slope outlet pipe. The outlet pipe runs a distance of 170 lineal feet to existing Stormwater Manhole 224. Manhole 224 is part of the site's stormwater collection system that drains to the SWRB and eventually makes its way to the Advanced Waste Water Treatment Facility before being discharged. An orifice will restrict flow to allow a 10 year storm to discharge over a period of 48 hours so as not to have a significant impact on the existing SWRB.

OU1 Plant Facility

The plant facility will cover open space between the road on the east side of Waste Pits 2, 4, and 6, the Biodenitrification Surge Lagoon, and rail spur 12. The facility will extend across the eastern limit of the OU1 area and into Operable Unit 5 (OU5). General improvements to this area include clearing, grading, construction of two new rail spurs, concrete loadout area with rail track scale, a stormwater management pond with a subsurface drainage system, and fire water line installations.

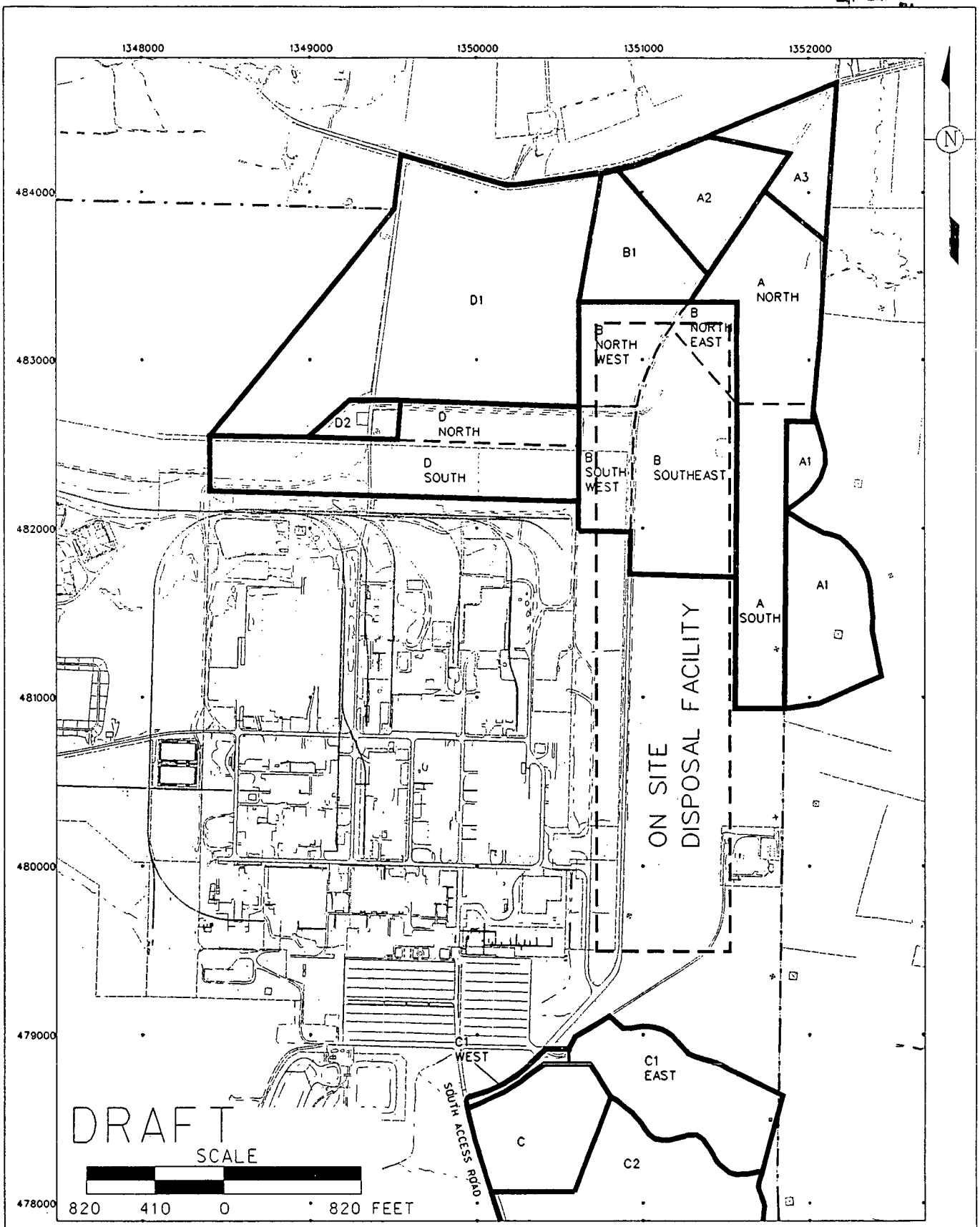
3.0 REMEDIAL ACTIVITIES

Prior to stripping of the railyard, the above mentioned sedimentation basin and stockpile will be constructed. The stockpile is necessary to contain potentially contaminated material from Areas D and B southwest. During stockpile and its related stormwater collection basin construction, railyard construction will begin with the excavation of the Main Ditch, this will provide fill material for the OU1 Plant facility. Next the Area D sedimentation basin will be constructed with its 48 inch outlet culvert, then the excavation of the basin inlet South Ditch. The South Ditch must be constructed prior to any scraping of the Areas D and B southwest such that sediment loads are collected into the sedimentation basin.

Sampling and analysis during the OU5 Remedial Investigation provided total uranium concentrations from 0-6", 6-12", and 12-18" in locations which included the north railyard area. The attached drawing, Site Rail Improvements - Contaminated Points in 6" Topsoil Removal Area, shows the north railyard and surrounding area with the only two data points in that area that exceeded the OSDF WAC - one data point outside the scope of north railyard activities and one data point in the north railyard area of excavation. As indicated in the attached drawing, this data point is located in an area designated for segregation as a result of site radiological control requirements. Prior to stripping the top 6 inches, this area will be removed. The soil and any contaminated asphalt from the adjacent road will be managed (as indicated in the Site Improvement Plan and the Site Preparation Activities letter) within the OU1 boundary with other soil and debris generated from OU1 site preparation activities that are destined for eventual treatment in the OU1 remediation facility. Once this area is removed, stripping of the top 6 inches will proceed. SRP personnel will follow the scraping of these areas with radiological testing. Excavation and grading of the rail areas will proceed next with excess soil (28,000 cyd total) being transported to the OU1 Plant facility. Construction of the rails, ties, and loadout facility with track scale will finish preparatory and upgrade activities.

4.0 SCHEDULE

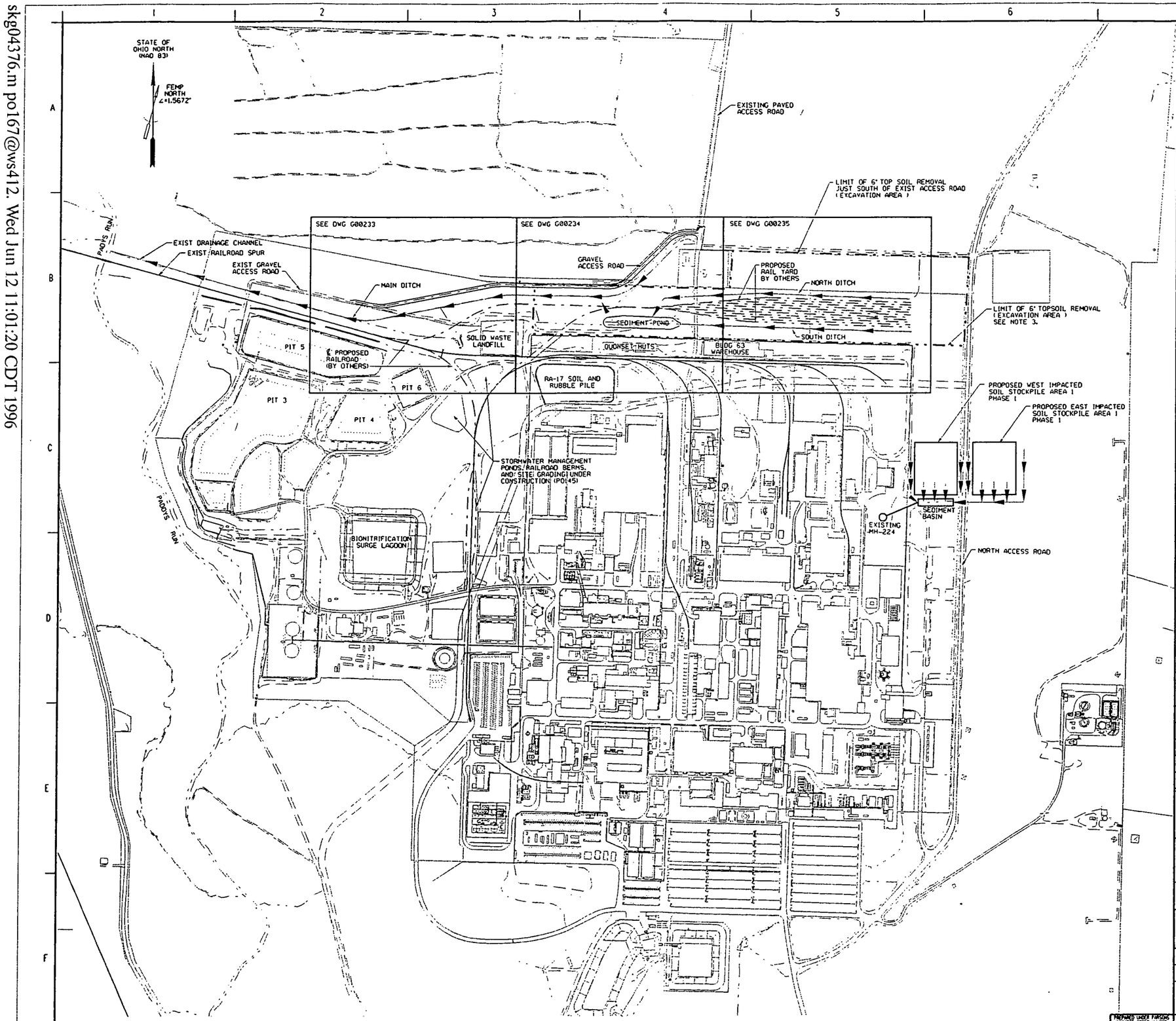
This amendment is being submitted for EPA and Ohio EPA review and concurrence. DOE respectfully requests an expedited review by July 3, 1996. This would provide enough time to begin preparation for the stockpile area, installation of stormwater management controls, and would allow for maximum utilization of construction equipment.



/USR/ERMA/CRUS/DGN/MAP/HOR/DPTH/CSCEL015.DGN FER 005 3/15/96 STATE PLANAR COORDINATE SYSTEM 1983

000008

FIGURE 2-1. DEPICTION OF AREA 1 PHASE 1 ACTIVITIES



NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. THE SEDIMENT BASIN AND THE SOUTH DITCH LEADING TO THE SEDIMENT BASIN SHALL BE EXCAVATED PRIOR TO THE 6" TOP SOIL EXCAVATION. CONTRACTOR IS TO REMOVE ALL SEDIMENT FROM THE SEDIMENT BASIN TO THE PROPOSED GRADE AT THE COMPLETION OF THE CONSTRUCTION ACTIVITIES.

3. THE EXCAVATED 6" TOP SOIL SHALL BE PILED AT THE WEST IMPACTED SOIL STOCKPILE. LIMIT, CONFIGURATION AND SEDIMENT CONTROL MEASURES FOR THE STOCK PILE WILL BE ESTABLISHED BY FERMCO.

4. THE FOLLOWING 8 MONITORING WELLS (4436, 2436, 3423, 2423, 1890, 2037, 3037, 2949) TO REMAIN IN USE. THE 6" TOP SOIL EXCAVATION SHALL BE WORKED AROUND THEM. ALL OTHER WELLS AND BORINGS INSIDE THE PROJECT AREA, SHOWN ON PLANS, ARE EITHER REMOVED OR THEY ARE CURRENTLY BEING REMOVED (BY OTHERS).

FB: 306

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00235	GRADING AND DRAINAGE PLAN - SHEET 3 OF 3

000009

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	FERMCO INITIALS AND DATE	DOE INITIALS AND DATE
A	ISSUED FOR USEPA REVIEW		N/A	

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
GRADING AND DRAINAGE
MASTER SITE PLAN

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R. LINDGREN	01/22/96			K. GERARD	04/19/96
PLANT/BLDG NO.		FLOOR		SCALE	CLASS
				1"=200'	
SUBMITTED FOR APPROVAL		FERMCO DRU APPROVAL		FERMCO PROJECT NUMBER	
A-E DATE		N/A DATE		10200	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING SHEET CODE NO.	SHEET NO.	REV. NO.
WPRAP/P0167		WBS 1.1.1.1.1.3.1 00-90701	SK-G-04376	G0001	A

STATE OF OHIO NORTH (NAD-83)

FEMP NORTH ∠+1.5672°

LIMIT OF 6" TOP SOIL REMOVAL JUST SOUTH OF EXIST ACCESS ROAD (EXCAVATION AREA)

GRAVEL ACCESS ROAD

SOIL CONTAMINATION AREA

LIMIT OF 6" TOPSOIL REMOVAL (EXCAVATION AREA)

SOLID WASTE LANDFILL

QUONSET HUTS

BLDG 63 WAREHOUSE

NORTH ACCESS ROAD

RA-17 SOIL AND RUBBLE PILE

PIT 6

STORMWATER MANAGEMENT PONDS, RAILROAD BERMS, AND/SITE GRADING UNDER CONSTRUCTION (PO145)

BIONITRIFICATION SURGE LAGOON

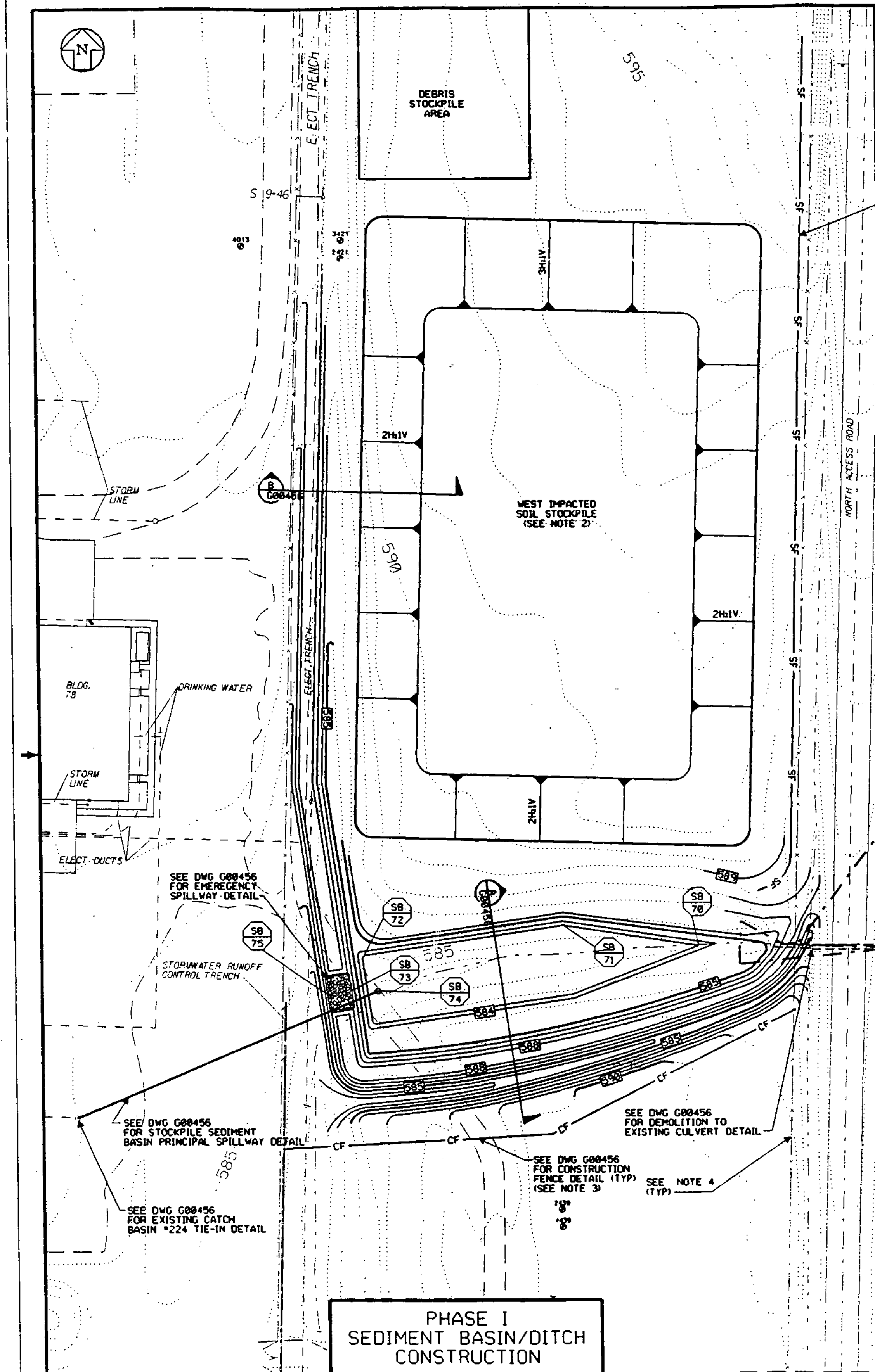
SAMPLE LOCATION TOTAL URANIUM CONCENTRATION EXCEEDS WAC (1030 PPM)

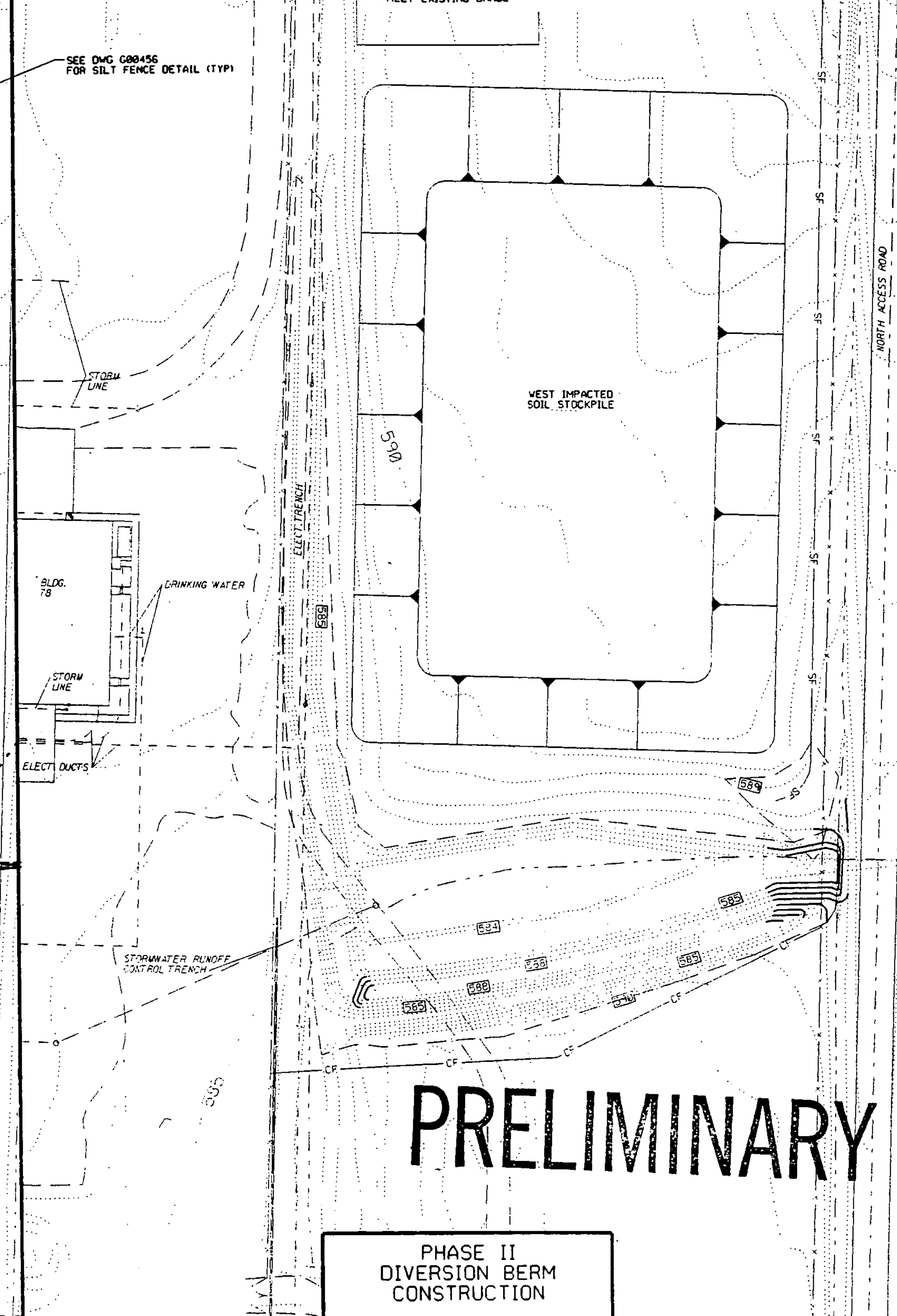
SOIL CONTAMINATION AREA TO BE REMOVED

000010

SITE RAIL IMPROVEMENTS

CONTAMINATION POINTS IN THE 6" TOP SOIL REMMOVAL AREA





COORDINATES AND ELEVATIONS (NAD 83)

POINT	ABBR	NORTHING	EASTING	ELEVATION	DESCRIPTION
70	SB	481278.20	1350813.38	SEE SECTION	SEDIMENT BASIN
71	SB	481290.40	1350732.76	SEE SECTION	SEDIMENT BASIN
72	SB	481272.56	1350615.37	SEE SECTION	SEDIMENT BASIN
73	SB	481252.62	1350608.44	SEE DETAIL	℄ EMERGENCY SPILLWAY
74	SB	481252.37	1350623.68	SEE DETAIL	RISER
75	SB	481250.56	350594.42	SEE DETAIL	℄ EMERGENCY SPILLWAY

* • MEET EXISTING GRADE

GENERAL NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW. EXISTING SITE DATA SOURCE (IN PLANT FILES)

   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. FOR THIS PROJECT THE TERM "IMPACTED MATERIAL" REFERS TO SOIL, DEBRIS, AND OTHER MATERIAL WHICH ARE WITHIN THE SCOPE OF THIS PROJECT.

3. INSTALL CONSTRUCTION FENCE ALONG THE OUTSIDE TOE OF SLOPE OF STOCKPILE SEDIMENT BASIN EMBANKMENT. CONTINUE CONSTRUCTION FENCE AS INDICATED ON PLAN.

4. REMOVE EXISTING FENCE AS NECESSARY TO PERFORM GRADING AND REPLACE IN ACCORDANCE WITH SPECIFICATION 02831.

SYMBOLS LEGEND

EXISTING		PROPOSED
⊙	CATCH BASIN (CB)	D
	GRAVEL ROADWAY/DRIVEWAY	
	ASPHALT ROADWAY/DRIVEWAY	
	CONCRETE PAD/ ROADWAY/DRIVEWAY	
	CHAIN LINK FENCE	
	CONSTRUCTION FENCE	—CF———CF—
	CENTERLINE DRAINAGE DITCH	
	RIVER/CREEK	
	FENCE GATE	
	EXISTING BUILDINGS/ TRAILERS	
	SILT FENCE	—SF———SF—

306

GRADING SYMBOLS

EXISTING		PROPOSED
.... 584	CONTOUR - MINOR	583
.... 585	CONTOUR - MAJOR	585
(TOE)	SLOPE INDICATOR	(TOE)

DESIGNATES CUTTING PLANE OF SECTION — SECTION IDENTIFICATION — A G00001 — DRAWING NUMBER WHERE SECTION IS DRAWN

DESIGNATES ABBREVIATIONS FOR DESCRIPTION — EXL 3 — COORDINATE POINT

NOTE:

ABBREVIATED DRAWING NUMBERS WILL BE USED FOR ALL SECTIONS, DETAILS, ELEVATIONS, AND WITHIN NOTES AND CALL OUTS IN THE BODY OF THE DRAWING.

FOR EXAMPLE: 95X-5900-G-00002 = DRAWING NUMBER
G00002 = ABBREVIATED DRAWING NUMBER

DIMENSIONING:

DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+/-) SHALL BE VERIFIED IN THE FIELD BY CONTRACTOR.

USE DIMENSIONS AS SHOWN, DO NOT SCALE.

NTS (NOT TO SCALE) IS SHOWN ONLY WHERE DIMENSION IS OBVIOUSLY OUT OF SCALE.

000011

30' 0' 30' 60'
GRAPHIC SCALE: 1"=30'

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
						???	6/??	JP	??	75X-5500-G-00456

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

PERFORMANCE GRADE 1 2 3 ④ 5
BY: DATE:

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		Q.A.	
INSTRUMENT		FIRE PROTECT.	
MECHANICAL		WASTE MANAGE	
		SECURITY	
		CRU	
CHECKED			
APPROVED			

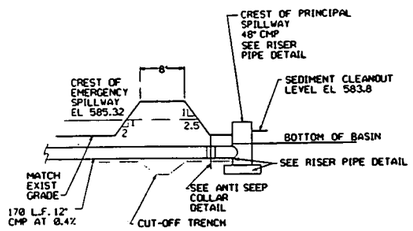
FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

FEMP SOIL REMEDIATION
AREA 1 PHASE 1 (WEST)
REMEDIAL ACTION PROJECT
SITE PLAN
SCALE: 1" = 30'-0"

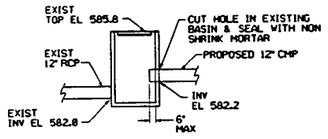
RES 2868
DATE 6/77/96
DRAWN J. PARSONS
75X-5900-G-00455 0

FORMAT REVISED 8/7/95

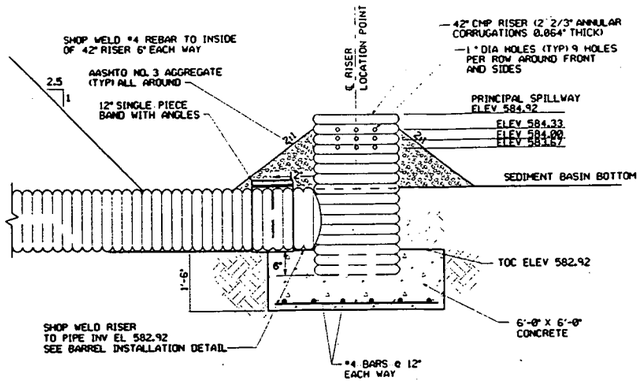
FILE NAME: RES2868/75xg0455.dgn $$$TIME$$$



STOCKPILE SEDIMENT BASIN PRINCIPAL SPILLWAY DETAIL
NTS

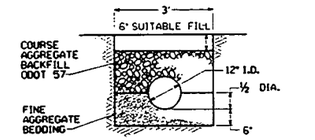


EXISTING CATCH BASIN #224 TIE-IN DETAIL
NTS

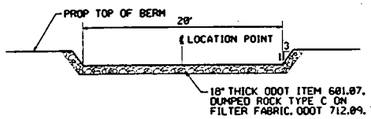


SIDE VIEW

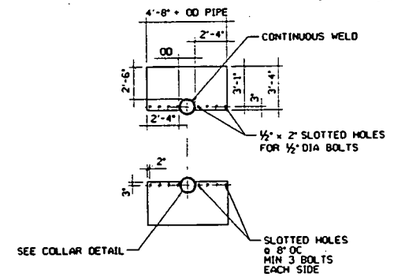
RISER PIPE DETAIL
NTS



BARREL INSTALLATION DETAIL
NTS



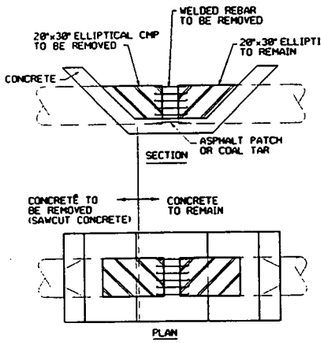
EMERGENCY SPILLWAY DETAIL
NTS



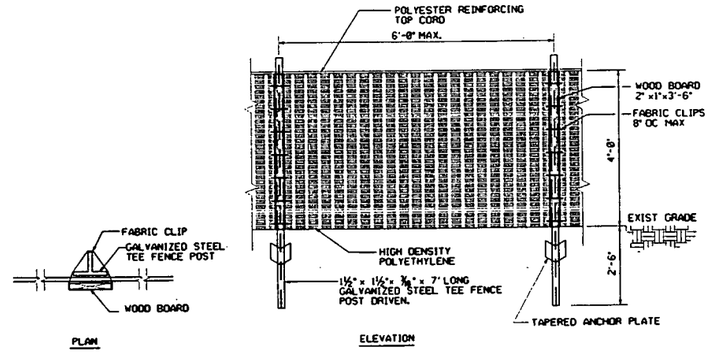
NOTE:

THE LAP BETWEEN THE PIPE AND COLLAR SHALL BE CAULKED WITH AN ASPHALTIC MASTIC AT TIME OF INSTALLATION.

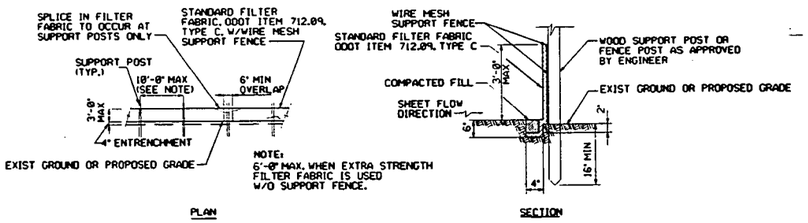
ANTI SEEP COLLAR
NTS



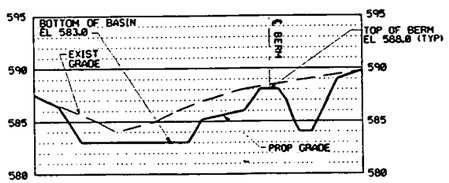
DEMOLITION TO EXISTING CULVERT DETAIL
NTS



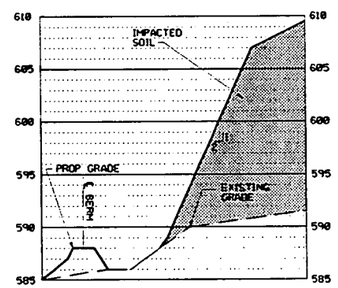
CONSTRUCTION FENCE DETAIL
NTS



SILT FENCE DETAIL
NTS



SECTION (A) REF C00456 C00455
SCALE: HOR 1"=20' VER 1"=5'



SECTION (B) REF C00456 C00455
SCALE: HOR 1"=20' VER 1"=5'

PRELIMINARY

000012

NO.	REVISIONS	DATE	DWN. BY	APPD.
	ISSUED CERTIFIED FOR CONSTRUCTION	5/30	JP	DJB

REVISIONS

REF. DWG. NO.

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

PERFORMANCE GRADE: 1 2 3 (4) 5 — BY: DATE:

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		Q.A.	
INSTRUMENT		FIRE PROTECT.	
MECHANICAL		WASTE MANAGE	
CHECKED		SECURITY	
APPROVED		CRU	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO — Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

FEMP — SOIL REMEDIATION
AREA 1 PHASE 1 (WEST) REMEDIAL ACTION PROJECT
DETAIL SHEET 1
NO SCALE

RES 2868	
DATE 7/27	75X-5900-G-00456 | 0
DRAWN J. PARSONS	

FORMAT REVISED 8/7/95

FILE NAME: $$$$DGNSPEC$$$$ $$$TIME$$$

E-306

2- BURIED TELEPHONE CABLE RUNS. ONE 3'-5" FROM EAST EDGE OF ROAD, THE OTHER 7'-8" (REF DWG 004-5500-E-01321)

MATCH LINE SHEET 2 OF 3 SEE DWG 75A-5500-G-00448

SEE DWG X00452 FOR CONSTRUCTION ENTRANCE/ DECONTAMINATION PAD DETAIL

DEBRIS STOCKPILE AREA

AREA 1 SOUTH 30.4 ACRES

SEE NOTE 5 (TYP)

WEST IMPACTED SOIL STOCKPILE AND STOCKPILE SEDIMENT BASIN (BY OTHERS)

EXISTING WELLS TO BE REMOVED BY OTHERS

EAST IMPACTED SOIL STOCKPILE

2H:1V

SEE DWG X00450 FOR STRAW BALE CULVERT PROTECTION DETAIL

MEET EXISTING GRADE

℄ RELOCATED NORTH ACCESS ROAD (SEE NOTE 2)

LIMIT OF 6" TOPSOIL REMOVAL SEE NOTES 3 AND 4 (TYP)

6" TOPSOIL REMOVAL EAST OF DIVERSION DITCH MAYBE EXCAVATED DURING DIVERSION DITCH CONSTRUCTION

STORMWATER RUNOFF CONTROL TRENCH

SEDIMENT BASIN #1 (SEE NOTE 6)

SEE DWG X00450 FOR EMERGENCY SPILLWAY DETAIL

SEE DWG X00450 FOR OUTLET CHANNEL DETAIL

LAYDOWN AREA

NORTH ACCESS ROAD

GENERAL NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.
   EXISTING SITE DATA SOURCE (IN PLANT FILES)

   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. THE RELOCATED NORTH ACCESS ROAD IS TO BE BUILT BY OTHERS. THE LOCATION SHOWN IS APPROXIMATE AND PROVIDED FOR CONTRACTOR INFORMATION ONLY.

3. THIS AREA IS THE LIMITS OF 6" TOPSOIL REMOVAL SEE TABLE ON THIS DRAWING FOR COORDINATES OF LIMITS. INSTALL SILT FENCE ALONG LIMITS OF EXCAVATION BETWEEN AREAS INDICATED. SEE DWG 75X-5500-X-00452 FOR SILT FENCE DETAIL.

4. THIS AREA IS THE LIMIT OF 6" TOPSOIL REMOVAL. SEE DWG 75X-5500-X-00452 FOR DETAIL OF EXCAVATION ALONG THE PROPERTY LINE. THE LIMIT OF 6" TOPSOIL REMOVAL ALONG THE NORTH ACCESS ROAD SHALL BE ESTABLISHED BY THE SUBCONTRACTOR ALONG THE RIDGE LINE. IF NO RIDGE LINE IS DEFINEABLE, THE DISTANCE SHALL BE NO LESS THAN 15' FROM EDGE OF PAVEMENT.

5. REMOVE ALL EXISTING TREES WITHIN EXCAVATION LIMITS AND STOCKPILE AREAS.

6. INSTALL CONSTRUCTION FENCE ALONG THE OUTSIDE TOE OF SLOPE OF SEDIMENT BASIN #1 EMBANKMENT. CONTINUE CONSTRUCTION FENCE AS INDICATED ON PLAN. SEE DWG 75X-5500-X-00452 FOR CONSTRUCTION FENCE DETAIL.

(1) PROTECT EXISTING WELLS SEE DWG 75X-5500-X-00452 FOR MONITORING WELL DETAIL
(2) EXISTING CONCRETE PAD AND FOUNDATION TO BE DEMOLISHED AND PLACED IN DEBRIS STOCKPILE AREA.
(3) REMOVE EXISTING SINGLE STRAND CATTLE FENCE IN ITS ENTIRETY INCLUDING OUTSIDE OF 6" TOPSOIL REMOVAL AREA (APPROXIMATELY 5000 L.F.)
(4) EXISTING CULVERTS TO BE REMOVED
(5) PROTECT EXISTING BENCHMARKS
(6) REMOVE EXISTING GRAVEL ROADS AND STOCKPILE SEE SPECIFICATION 02100 FOR DETAILS
(7) PROTECT EXISTING OVERHEAD ELECTRIC TOWER SEE DWG 75X-X-5500-X-00452 FOR DETAIL

COORDINATES AND ELEVATIONS (NAD 83)

POINT	ABBR	NORTHING	EASTING	ELEVATION	DESCRIPTION
6	EXL	481223.38	1351039.73	N/A	LIMIT OF EXCAVATION
7	EXL	481225.85	1351551.48	N/A	LIMIT OF EXCAVATION
8	EXL	481715.84	1351555.25	N/A	LIMIT OF EXCAVATION
9	EXL	481724.55	1351269.59	N/A	LIMIT OF EXCAVATION
50	DL	481688.22	1351279.83	**	DIVERSION DITCH CENTERLINE (END)
51	DL	481881.58	1351835.58	612.8	DIVERSION DITCH CENTERLINE (BEGIN 2.7% SLOPE)
52	DL	481688.89	1351833.18	604.6	DIVERSION DITCH CENTERLINE (BEGIN 1.8% SLOPE)
53	DL	481511.18	1351772.38	N/A	DIVERSION DITCH CENTERLINE
54	DL	481172.98	1351769.28	**	DIVERSION DITCH CENTERLINE (END)
55	DL	481232.91	1351719.81	600.0	DIVERSION DITCH CENTERLINE (BEGIN 1.6% SLOPE)
56	DL	481236.85	1351353.83	**	DIVERSION DITCH CENTERLINE (END)
57	DL	481060.18	1350958.97	587.6	INVERT OF OUTLET PIPE
58	DL	480988.47	1350912.57	**	OUTLET CHANNEL (END)
59	SB	481293.03	1351268.81	SEE SECTION	SEDIMENT BASIN #1 (NE CORNER)
60	SB	481209.65	1350966.38	SEE SECTION	SEDIMENT BASIN #1 (NW CORNER)
61	SB	481106.89	1350973.25	SEE DETAIL	SEDIMENT BASIN #1 RISER
62	SB	481089.28	1351032.06	592.8	SEDIMENT BASIN #1 (EMERGENCY SPILLWAY CENTERLINE)
63	SB	481118.49	1351026.22	592.8	SEDIMENT BASIN #1 (EMERGENCY SPILLWAY CENTERLINE)
64	DL	481694.15	1351255.27	595.5	EAST STOCKPILE EAST DITCH (BEGIN 0.88% SLOPE)
65	DL	481322.28	1351234.44	**	EAST STOCKPILE EAST DITCH (END)
66	DL	481340.99	1351248.50	N/A	EAST STOCKPILE EAST DITCH CENTERLINE
67	DL	481815.54	1351263.84	**	EAST STOCKPILE (END OF BERM)
68	SB	481194.36	1351371.75	**	SEDIMENT BASIN #1 (END OF BERM)

** MEET EXISTING GRADE

000013

SCALE IN FEET 0 75 50 125 250

FORMAT REVISED 8/7/95

NO.	REVISIONS	DATE	DWN.	CHK'D	APPD.
0	ISSUED CERTIFIED FOR CONSTRUCTION	5/30	MET	DJB	

REF. DWG. NO.
75A-5500-G-00441
75X-5500-X-00450
75X-5500-X-00452

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

PERFORMANCE GRADE 1 2 3 4 5

APPROVALS			
			SAFETY ENG.
CIVIL & STR.	C.T.E. LINAWAY	5/30	MAINTENANCE
ELECTRICAL			QA
ENGINEER			FEM PROJECT
INSTRUMENT			WASTE MANAGE
MECHANICAL			SECURITY
			CBU
CHECKED	TCE		SOIL REM. PROJECT
APPROVED	TCE PAUL	6/3	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald Environmental Management Project
U.S. DEPARTMENT OF ENERGY

FEMP — SOIL REMEDIATION
AREA 1 PHASE 1 (EAST) REMEDIAL ACTION PROJECT
SITE PLAN 3 OF 3
SCALE: 1" = 50'-0"

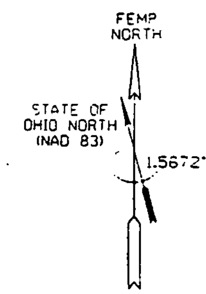
AES 2868	75A-5500-G-00441 | 0
DATE 6-30-96	
DRAWN J.E. TILLMAN	

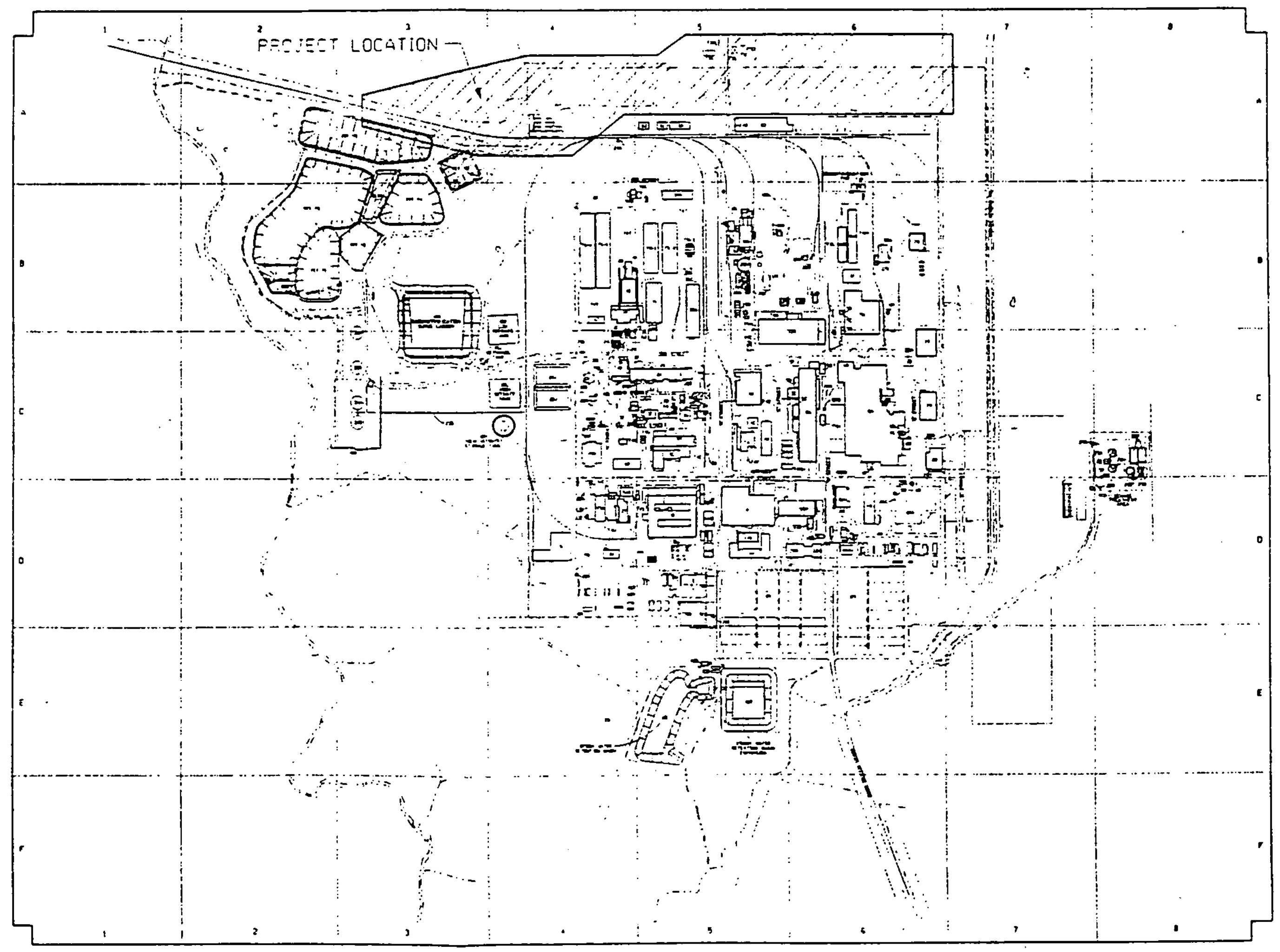
FILE NAME: PES2868/75a00441.dgn

FE-306

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE
PROJECT ORDER 167





PARSONS

The Ralph M. Parsons Company • Parsons Main, Inc. • Engineering-Science, Inc.

ARCHITECTS - ENGINEERS
CINCINNATI, OHIO

NOTES

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX

0	CERTIFIED FOR CONSTRUCTION		N/A	
REV	ISSUE OR REVISION PURPOSE - DESCRIPTION			

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
PROJECT TITLE SHEET

000011

SUBMITTED FOR APPROVAL

N/A

WPRAF/P0167

FE-306

NOTES

INDEX OF DRAWINGS

INDEX CODE NO.	DRAWING NO.	SHEET NO.	REVISION NO.	DRAWING TITLE	REMARKS
	91X-5900-X-00305	X0001	0	PROJECT TITLE SHEET	
	91X-5900-X-00306	X0002	0	DRAWING INDEX	
	91X-5900-X-00307	X0003	0	LEGEND AND SYMBOLS	
	91X-5900-G-00232	G0001	0	CIVIL - GRADING AND DRAINAGE - MASTER SITE PLAN	
	91X-5900-G-00233	G0002	0	CIVIL - GRADING AND DRAINAGE PLAN - SHEET 1 OF 3	
	91X-5900-G-00234	G0003	0	CIVIL - GRADING AND DRAINAGE PLAN - SHEET 2 OF 3	
	91X-5900-G-00235	G0004	0	CIVIL - GRADING AND DRAINAGE PLAN - SHEET 3 OF 3	
	91X-5900-G-00237	G0005	0	CIVIL - DETAILS - SHEET 1 OF 2	
	91X-5900-G-00238	G0006	0	CIVIL - DETAILS - SHEET 2 OF 2	
	91X-5900-G-00239	G0007	0	CIVIL - DETAILS AND SECTIONS	
	91X-5900-G-00240	G0008	0	CIVIL - STORM DRAIN PROFILES	

000015

REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION		N/A	5/5/98

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.

CINCINNATI, OHIO

PROJECT NAME

SITE RAIL SYSTEM IMPROVEMENTS

GRADING AND DRAINAGE PACKAGE

DRAWING TITLE

DRAWING INDEX

DRAWN BY: H. LINDGREN
SUBMITTED FOR APPROVAL: Kathryn W. Rudel
FERMCO CPE APPROVAL: N/A
A-E DATE 5/30/97

PREPARED AGAINST PROJECT ORDER NUMBER: WPRAP/P0157

WBS 1.1.1.1.1.3
91X-5900-X-00306 X0002

GENERAL LEGEND

DESIGNATES CUTTING PLANE OF SECTION

DRAWING NUMBER WHERE SECTION IS DRAWN

SECTION IDENTIFICATION (ALPHABETIC SEQUENCE)

DRAWING NUMBER(S) WHERE SECTION IS CUT

SECTION 1"=1'-0" A G00001 REF G00002

DRAWING NUMBER WHERE SECTION IS DRAWN (BLANK IF SECTION IS ON SAME DWG.)

DESIGNATES DETAIL IDENTIFICATION

G00001

DRAWING NUMBER WHERE DETAIL DRAWN

DESIGNATES AREA OF DETAIL

DETAIL IDENTIFICATION (NUMERICAL SEQUENCE)

DRAWING NUMBER(S) WHERE DETAIL WAS TAKEN

DETAIL 1"=1'-0" 2 G00001 REF G00002

DRAWING NUMBER WHERE DETAIL IS DRAWN (BLANK IF DETAIL IS ON SAME DWG.)

DESIGNATES ELEVATION IDENTIFICATION

E-1 G00002

DRAWING NUMBER WHERE ELEVATION IS DRAWN

ELEVATION IDENTIFICATION (E FOR ELEVATION - ELEVATION NUMBERS)

DRAWING NUMBER(S) WHERE ELEVATION WAS TAKEN

ELEVATION 1"=1'-0" E-1 G00001 REF G00002

DRAWING NUMBER WHERE ELEVATION IS DRAWN

2 — SECTION, DETAIL, OR ELEVATION FOUND ON SAME SHEET.

NOTE:

ABBREVIATED DRAWING NUMBERS WILL BE USED FOR ALL SECTIONS, DETAILS, ELEVATIONS, AND WITHIN NOTES AND CALL OUTS IN THE BODY OF THE DRAWING.

FOR EXAMPLE: 95X-5900-G-00002 = DRAWING NUMBER
G00002 = ABBREVIATED DRAWING NUMBER

DIMENSIONING:

DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+/-) SHALL BE VERIFIED IN THE FIELD BY CONTRACTOR.

USE DIMENSIONS AS SHOWN, DO NOT SCALE.

NTS (NOT TO SCALE) IS SHOWN ONLY WHERE DIMENSION IS OBVIOUSLY OUT OF SCALE.

FUTURE / UNDER CONSTRUCTION

- CONTOUR - MAJOR & MINOR
- UTILITIES
- BUILDING/TRAILER/PAD
- ROADWAY/SIDEWALK

UTILITY SYMBOLS

EXISTING		PROPOSED
----- ST -----	STORM SEWER	—— ST ——
----- SN -----	SANITARY SEWER	—— SN ——
----- FG -----	FUEL GAS	—— FG ——
----- DW -----	DRINKING WATER	—— DW ——
----- FP -----	FIRE PROTECTION	—— FP ——
----- LS -----	LIVE STEAM	—— LS ——
----- WS -----	WATER SUPPLY	—— WS ——
----- WR -----	COOLING WATER RETURN	—— WR ——
----- PW -----	PROCESS WATER	—— PW ——
----- CE -----	CONTAMINATE WATER	—— CE ——
----- FT -----	FILTRATE OR EFFLUENT	—— FT ——
----- DF -----	DEIONIZED FEED	—— DF ——
----- PW -----	DEIONIZED WATER	—— PW ——
----- BR -----	BRINE	—— BR ——
----- RW -----	RAW WATER	—— RW ——
----- A -----	ALARM	—— A ——
----- CN -----	STEAM CONDENSATE	—— CN ——
----- VE -----	VENT LINES	—— VE ——
----- SD -----	SUB-SURFACE DRAINAGE	—— SD ——
----- SL -----	SUMP LIQUOR	—— SL ——
----- E -----	ELECTRICAL	—— E ——
----- OE -◇-	OVERHEAD ELECTRICAL	—— OE —◆—
----- T -----	TELEPHONE	—— T ——
----- G -----	ELECTRIC GROUND	—— G ——
----- PA -----	PLANT AIR	—— PA ——
----- SA -----	INSTRUMENT AIR SUPPLY	—— SA ——
	ABANDONED	

BALLOON LEGEND

- PIV — POST INDICATOR VALVE
- SMH — SANITARY MANHOLE
- EMH — ELECTRICAL MANHOLE
- TMH — TELEPHONE MANHOLE
- CB — STORM SEWER CATCH BASIN
- HPH — HIGH PRESSURE FIRE HYDRANT
- LPH — LOW PRESSURE FIRE HYDRANT

DESIGNATES UTILITY — ST / 3 — COORDINATE POINT

GRADING SYMBOLS

EXISTING		PROPOSED
x 584.9	SPOT ELEVATION	x [584.9]
584	CONTOUR - MINOR	[584]
585	CONTOUR - MAJOR	[585]
(TOE)	SLOPE INDICATOR	(TOE)

SYMBOLS LEGEND

EXISTING		PROPOSED
	POST INDICATOR VALVE (PIV)	
	FIRE HYDRANT (FH)	
	MANHOLE (MH)	Ⓢ OR Ⓓ
	CATCH BASIN (CB)	[D]
	LIGHT POLE	
	PIPE SUPPORT	
	ELECTRICAL MANHOLE	
	TELEPHONE MANHOLE	
	STREET WASHERS	
	VALVE BOX	
1313	MONITORING WELL	
	SURFACE DRAINAGE FLOW	
	POWER POLE	
	GRAVEL ROADWAY/DRIVEWAY	
	ASPHALT ROADWAY/DRIVEWAY	
	CONCRETE PAD/ ROADWAY/DRIVEWAY	
	BUILDING/TRAILER	
	RAILROAD TRACK	
	OU BOUNDARY	
	FENCE	
	TREE LINE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	CENTERLINE DRAINAGE DITCH	
	RIVER/CREEK	
	TO BE REMOVED	
	SILT FENCE	
	ELECTRICAL TRANSFORMER	
	TRANSMISSION TOWER	
	HEADWALL	—— OR
BM	BENCH MARK	
	CONSTRUCTION/WIND BARRIER FENCE	
	SIGN	
	BOLLARD/GUARD POST	
PB	ELECTRICAL PULL BOX	
	SURVEY CONTROL POINT	
	ROAD, DITCH, RAILROAD CENTERLINE OR BASELINE	
	BEND	OR
	TEE	
	THRUST BLOCK	
W OR U	UNKNOWN	
	STRAW BALE SILT BARRIER	
	FENCE GATE	
	FLARED END SECTION	

NOTES

ABBREVIATIONS

℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
DWG	DRAWING
EXIST	EXISTING
GALV	GALVANIZED
MIN	MINIMUM
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
PC	POINT OF CURVATURE
PF	½" POINT OF FROG
POE	POINT OF ENDING
PS	POINT OF SWITCH
PT	POINT OF TANGENCY
R	RADIUS OF CURVE
RR	RAILROAD
TK	TRACK
TYP	TYPICAL

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX

000016

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION			
0	CERTIFIED FOR CONSTRUCTION		N/A	5/26/96

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

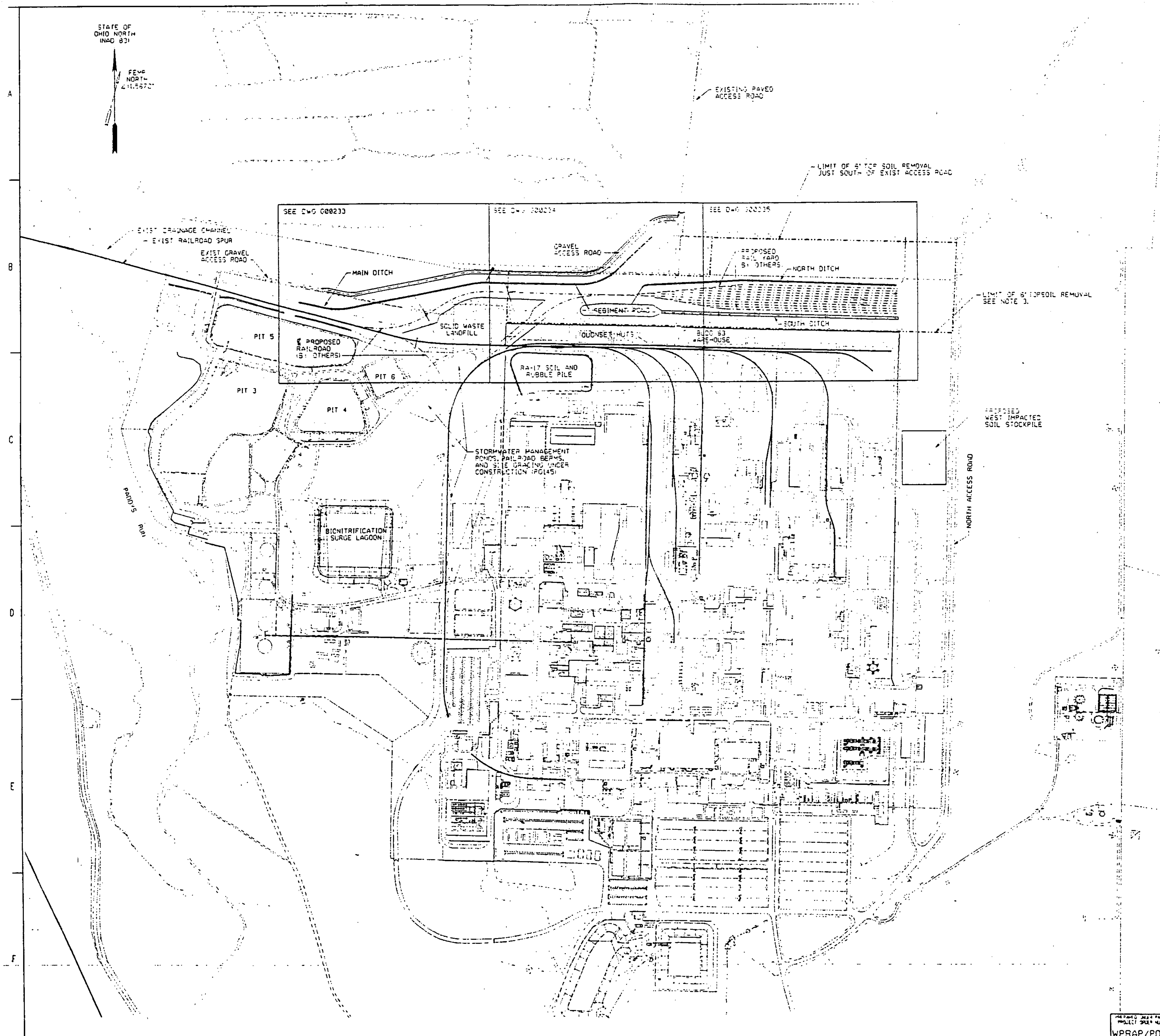
PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
LEGEND AND SYMBOLS

DRAWN BY R. LINDGREN DATE 02/27/95 — CHECKED BY — SUBMITTED FOR APPROVAL Kathryn W. Budd — FERNALD CRU APPROVAL N/A — 10700

WPRAP/F0167 — WBS 00-90701 — 91X-5900-X-00307 — 0003

-306



NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.

   EXISTING SITE DATA SOURCE (IN PLANT FILES):
   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. THE SEDIMENT BASIN AND THE SOUTH DITCH LEADING TO THE SEDIMENT BASIN SHALL BE EXCAVATED PRIOR TO THE 6" TOP SOIL EXCAVATION. CONTRACTOR IS TO REMOVE ALL SEDIMENT FROM THE SEDIMENT BASIN TO THE PROPOSED GRADE AT THE COMPLETION OF THE CONSTRUCTION ACTIVITIES.

3. THE EXCAVATED 6" TOP SOIL SHALL BE PILED AT THE WEST IMPACTED SOIL STOCKPILE. LIMIT, CONFIGURATION AND SEDIMENT CONTROL MEASURES FOR THE STOCK PILE WILL BE ESTABLISHED BY FERMCO.

4. THE FOLLOWING 8 MONITORING WELLS (4426, 2426, 3423, 2423, 1992, 2037, 3037, 2949) TO REMAIN IN USE. THE 6" TOP SOIL EXCAVATION SHALL BE WORKED AROUND THEM. ALL OTHER WELLS AND BORINGS INSIDE THE PROJECT AREA, SHOWN IN PLANS, ARE EITHER REMOVED OR THEY ARE CURRENTLY BEING REMOVED (BY OTHERS).

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00235	GRADING AND DRAINAGE PLAN - SHEET 3 OF 3

000017

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION			
0	CERTIFIED FOR CONSTRUCTION		N/A	5/30/96

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

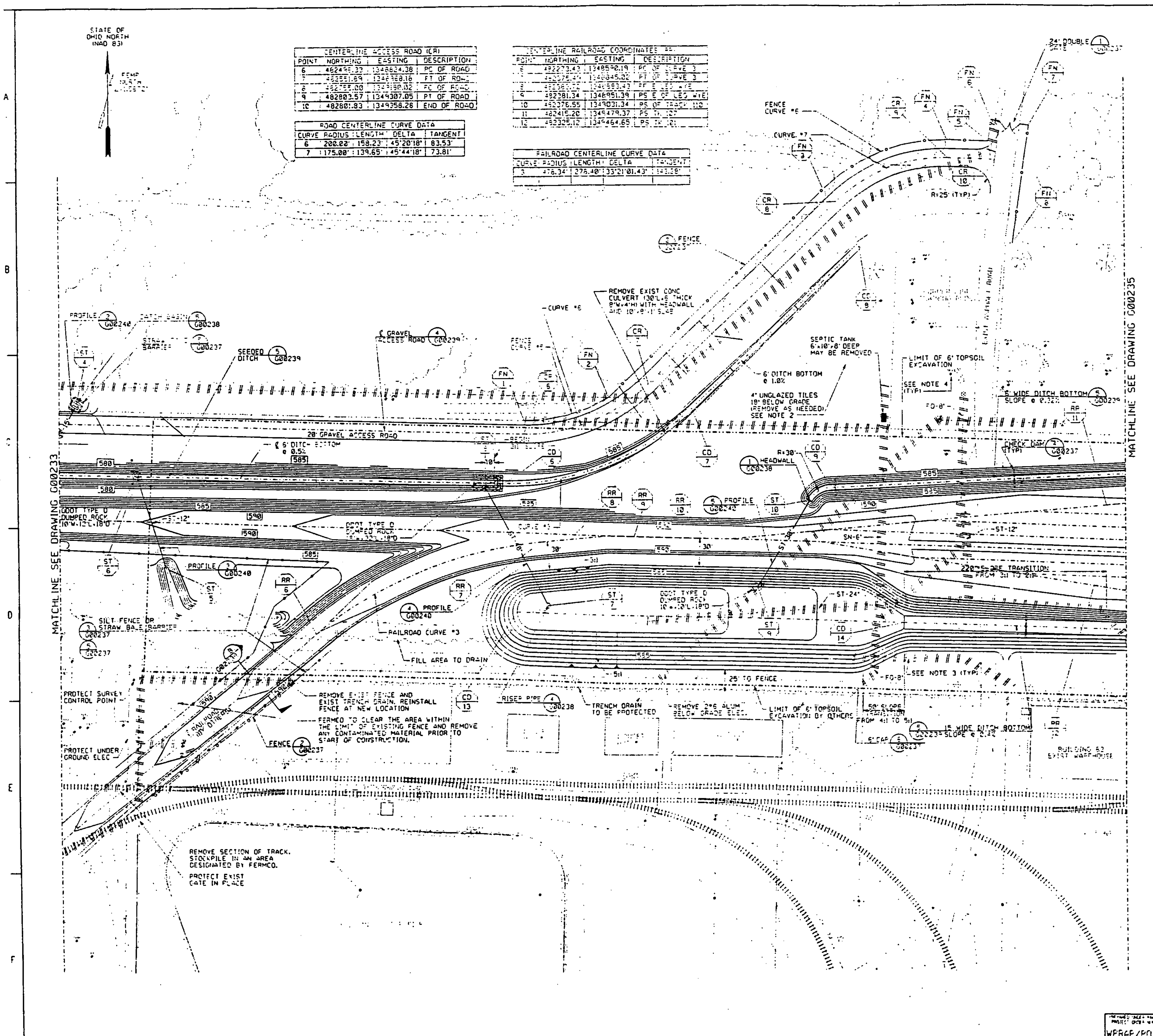
THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
GRADING AND DRAINAGE
MASTER SITE PLAN

DRAWN BY: R. LINDGREN — DATE: 01/22/96
CHECKED BY: K. GERARD
SUBMITTED FOR APPROVAL: Kathryn W. Rudd — DATE 5/30/96
N/A
10200
PREPARED UNDER PROJECT ORDER NUMBER: WPRAP/P0167
WBS 1.1.1.1.1.1
00-30701
91X-5900-G-00232 G0001 0

FE-306



CENTERLINE ACCESS ROAD (CR)			
POINT	NORTHING	EASTING	DESCRIPTION
6	482495.32	1348624.38	PC OF ROAD
7	482551.89	1348768.16	PT OF ROAD
8	482755.00	1349190.02	PC OF ROAD
9	482803.57	1349307.05	PT OF ROAD
10	482801.83	1349358.26	END OF ROAD

ROAD CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
6	200.02'	158.23'	45°20'18"	83.53'
7	175.00'	139.65'	45°44'18"	73.81'

CENTERLINE RAILROAD COORDINATES (RR)			
POINT	NORTHING	EASTING	DESCRIPTION
6	482273.43	1348590.19	PC OF CURVE 3
7	482275.4[illegible]	1348845.02	PT OF CURVE 3
8	482383.72	1348593.43	PS E LEG WYE
9	482381.34	1348951.39	PS E OF LEG WYE
10	482276.55	1349031.34	PS OF TRACK 110
11	482415.20	1349479.37	PS TK 127
12	482325.12	1349464.65	PS TK 121

RAILROAD CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
3	476.34'	276.40'	33°21'01.43"	143.39'

NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. DISPOSE OF ALL SANITARY WASTES IN THE FIELD PIPES IN A PROPER MANNER AS APPROVED BY FERMCO.
3. ALL UTILITIES, UTILITY STRUCTURES, FENCES AND CONCRETE CURB SHALL BE REMOVED AS INDICATED ON THE DRAWING.
4. FOR MONITORING WELLS SEE NOTE 4 ON DRAWING 91X-5900-G-00232.

STORM SEWER COORDINATES (ST)			
POINT	NORTHING	EASTING	DESCRIPTION
4	48253[illegible]	1348321.11	CATCH BASIN
5	482346.13	1348421.34	END PIPE
6	482440.02	1349293.53	END PIPE
7	482304.35	1348852.04	RISER PIPE
8	482430.55	1349784.78	HEADWALL
9	482323.76	1349035.02	END PIPE
10	482420.55	1349149.24	HEADWALL PC CURVE

CENTERLINE DITCH COORDINATES (CD)			
POINT	NORTHING	EASTING	DESCRIPTION
6	482441.23	1348802.98	PC
7	482524.60	1349017.78	PT
8	482704.91	1349205.82	END DITCH
9	482434.68	1349173.27	PT
13	482297.26	1348815.18	END SEDIMENT POND
14	482233.53	1349256.37	END DITCH

DITCH CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
3	300.00'	236.46'	45°09'53"	124.77'
4	125.00'	99.51'	45°37'35"	52.58'

FENCE COORDINATES (FN)			
POINT	NORTHING	EASTING	DESCRIPTION
1	482511 ±	1348825 ±	TIE TO EXIST
2	482536.76	1348923.53	CORNER
3	482763.33	1349165.54	CORNER
4	482823.60	1349306.39	CORNER
5	482822.06	1349351.18	CORNER
6	482845.97	1349354.62	CORNER
7	482840.00	1349396.00	CORNER
8	482707.72	1349376.93	CORNER

FENCE CURVE DATA			
CURVE	RADIUS	LENGTH	DELTA
5	185.00'		
6	195.00'		

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00232	GRADING AND DRAINAGE - MASTER SITE PLAN
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00235	GRADING AND DRAINAGE PLAN - SHEET 3 OF 3
91X-5900-G-00237	DETAILS - SHEET 1 OF 2
91X-5900-G-00238	DETAILS - SHEET 2 OF 2
91X-5900-G-00239	DETAILS AND SECTIONS
91X-5900-G-00240	STORM DRAIN PROFILES

000018

0 CERTIFIED FOR CONSTRUCTION N/A

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. PARSONS MAIN, INC. ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
GRADING AND DRAINAGE PLAN
SHEET 2 OF 3

DRAWN BY R. LINDGREN
SCALE 1"=40'
FEMP PROJECT NUMBER 10200
WPRAP/P0167
91X-5900-G-00234

FE-306

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH

CENTERLINE ACCESS ROAD (CR)			
POINT	NORTHING	EASTING	DESCRIPTION
1	482414.51	1347363.65	BEGIN ROAD
2	482393.36	1347467.60	PC OF ROAD
3	482392.80	1347544.48	PT OF ROAD
4	482524.64	1348138.51	PC OF ROAD
5	482512.24	1349233.90	PT OF ROAD

ROAD CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	200.20'	77.35'	22°29'48"	39.1[illegible]
2	450.20'	95.87'	12°12'21"	48.[illegible]

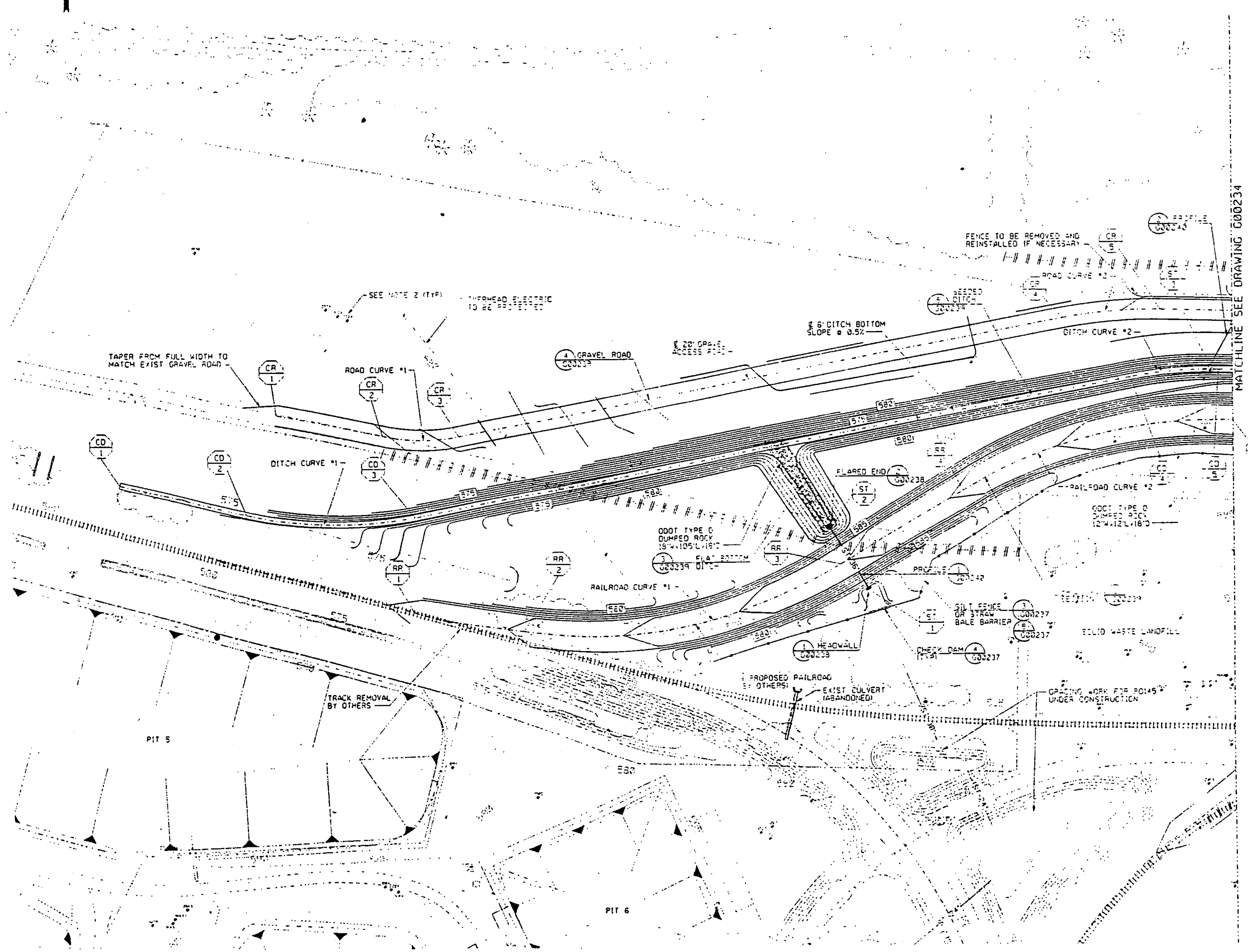
CENTERLINE DITCH COORDINATES (CD)			
POINT	NORTHING	EASTING	DESCRIPTION
1	482346.80	1347209.20	BEGIN DITCH
2	482317.53	1347332.8[illegible]	PC OF DITCH
3	482314.00	1347498.[illegible]	PT OF DITCH
4	482446.74	1348203.9[illegible]	PC OF DITCH
5	482453.53	1348287.45	PT OF DITCH

DITCH CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	400.20'	166.49'	23°[illegible]	84.4[illegible]
2	400.20'	83.98'	12°[illegible]	[illegible]

CENTERLINE RAILROAD COORDINATES (RR)			
POINT	NORTHING	EASTING	DESCRIPTION
1	48222[illegible].37	1347497.49	PS N. LEG WYE
2	[illegible]	1347607.05	PC OF CURVE 1
3	482285.20	1347919.51	PT OF CURVE 1
4	482336.54	1348036.81	PC OF CURVE 2
5	482424.05	1348301.01	PT OF CURVE 2

RAILROAD CENTERLINE CURVE DATA				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
1	478.34	324.29'	38°55'34.59"	169.24'
2	478.34'	273.[illegible]	32°52'45.64"	141.14

STORM SEWER COORDINATES (ST)			
POINT	NORTHING	EASTING	DESCRIPTION
1	482240.58	1347947.05	HEADWALL
2	482299.[illegible]	1347910.5[illegible]	FLARED END
3	482456.84	1348279.3[illegible]	END PIPE



NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   PARSONS TOPOGRAPHY [illegible]
   FEMP CADD GRID UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. FOR MONITORING WELLS SEE NOTE 4 ON DWG G00234.

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00232	GRADING AND DRAINAGE - MASTER SITE PLAN
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00237	DETAILS - SHEET 1 OF 2
91X-5900-G-00238	DETAILS - SHEET 2 OF 2
91X-5900-G-00239	DETAILS AND SECTIONS
91X-5900-G-00240	STORM DRAIN PROFILES

000019

0	CERTIFIED FOR CONSTRUCTION	R2	N/A	7/30/98
REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	INITIALS AND DATE		

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

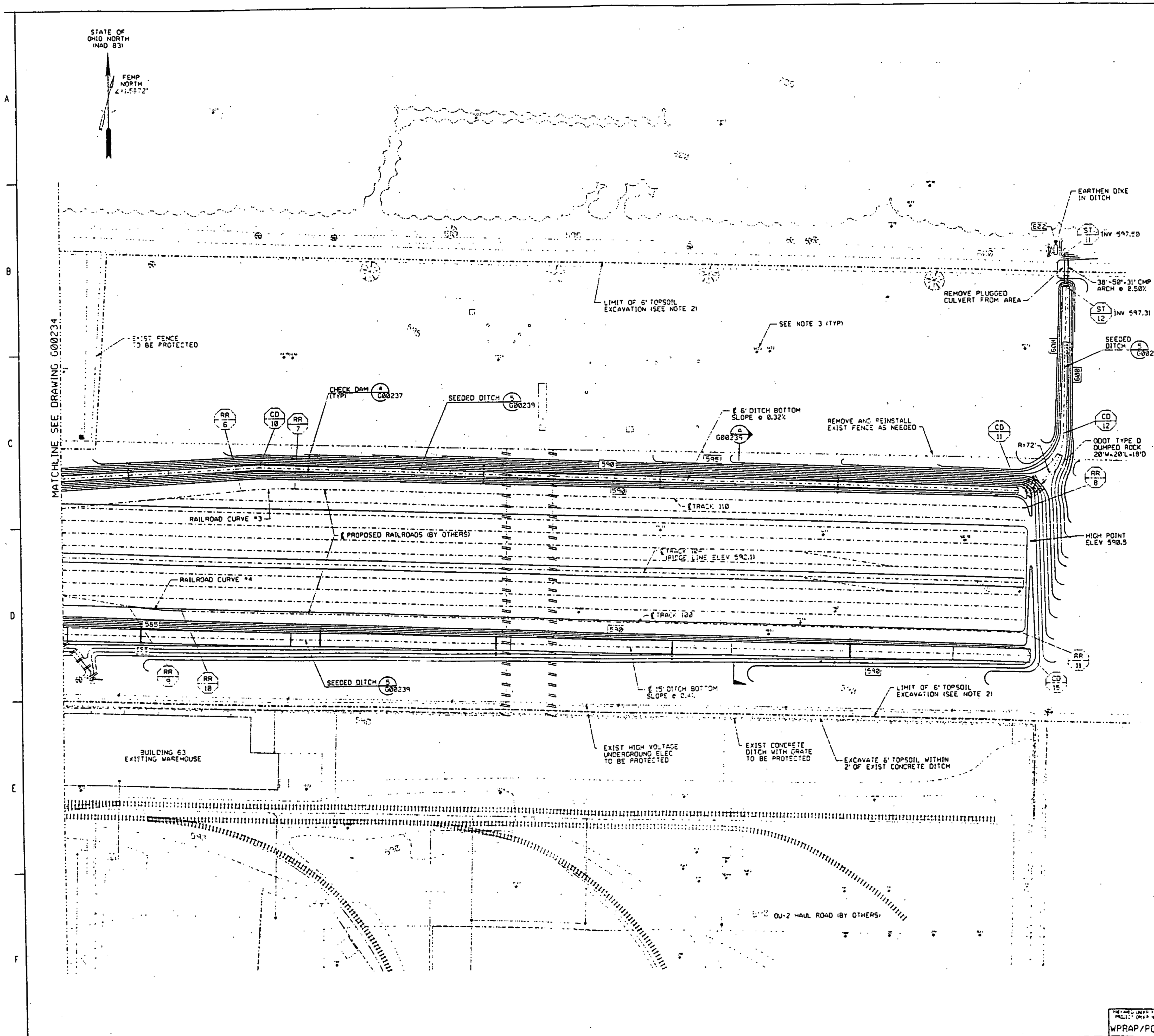
PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
GRADING AND DRAINAGE PLAN
SHEET 1 OF 3

DRAWN BY: R. LINDGREN
SCALE: 1"=40'
SUBMITTED FOR APPROVAL: [signature]
FERMCO ENG APPROVAL: N/A
FERNALD PROJECT NUMBER: 10200

WFRAP/P0167

91X-5900-G-00233-00002 0



NOTES

1. EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE PREPARED FROM FEMP SITE PROVIDED DATA FROM THE DOCUMENTS LISTED BELOW.

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   PARSONS TOPOGRAPHY, 1992
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. FOR OVERALL LIMITS OF 6' TOPSOIL EXCAVATION AND LIMITS OF NEW FENCING SEE DRAWING 91X-5900-G-00232.

3. FOR MONITORING WELLS SEE NOTE 4 ON DWG G00232.

STORM SEWER COORDINATES (ST)

POINT	NORTHING	EASTING	DESCRIPTION
11	482694.36	1350635.40	END PIPE
12	482656.36	1350634.42	END PIPE

CENTERLINE DITCH COORDINATES (CD)

POINT	NORTHING	EASTING	DESCRIPTION
10	482461.23	1349723.03	ANGLE IN DITCH
11	482427.89	1350578.61	BEGIN DITCH
12	482491.79	1350630.19	PC
15	482242.58	1350590.32	BEGIN DITCH

CENTERLINE RAILROAD COORDINATES (RR)

POINT	NORTHING	EASTING	DESCRIPTION
6	482435.40	1349703.38	PC OF CURVE 5
7	482437.25	1349763.04	PT OF CURVE 5
8	482409.28	1350586.48	POE TK 110
9	482307.23	1349575.62	PC OF CURVE 6
10	482301.43	1349635.04	PT OF CURVE 6
11	482268.36	1350581.60	POE TK 100

RAILROAD CENTERLINE CURVE DATA

CURVE	RADIUS	LENGTH	DELTA	TANGENT
3	478.34'	59.61'	7°09'10.00"	29.90'
4	478.34'	59.61'	7°09'10.00"	29.90'

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00232	GRADING AND DRAINAGE - MASTER SITE PLAN
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00237	DETAILS - SHEET 1 OF 2
91X-5900-G-00239	DETAILS AND SECTIONS

000020

REV	ISSUE OR REVISION PURPOSE - DESCRIPTION			
0	CERTIFIED FOR CONSTRUCTION	KD	N/A	5/6/96

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

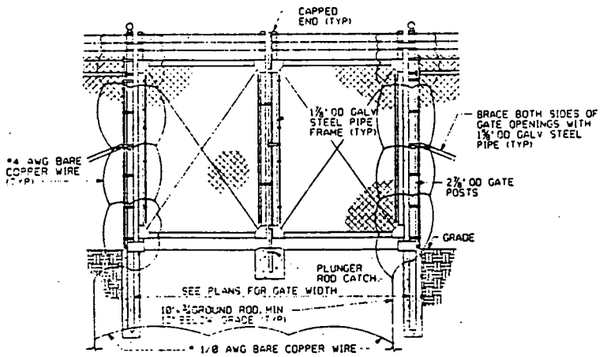
PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
GRADING AND DRAINAGE PLAN
SHEET 3 OF 3

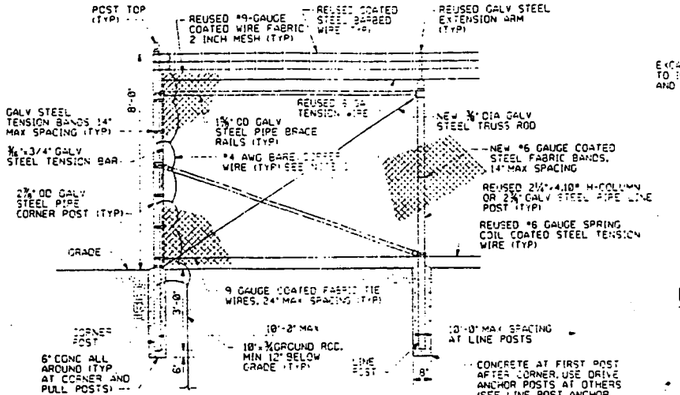
DRAWN BY P. LINDGREN · DATE 2/27/96 · N/A · 10200

PREPARED UNDER PARSONS PROJECT ORDER NUMBER WPRAP/P0167

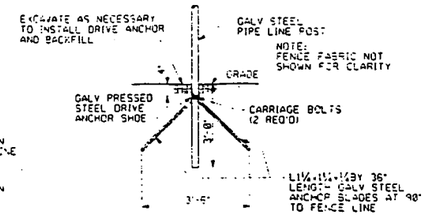
91X-5900-G-00235 00004 0



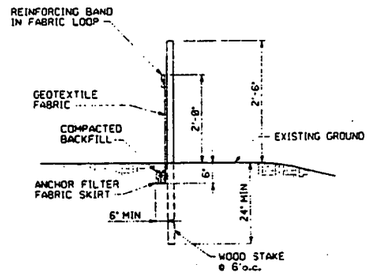
DOUBLE GATE DETAIL (1) REF C00237 C00234
NTS



DETAIL (2) REF C00237 C00234 C00235
NTS

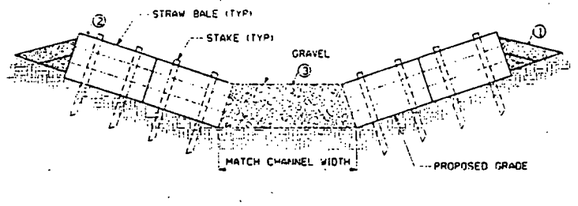


LINE POST DRIVE ANCHOR DETAIL
NTS



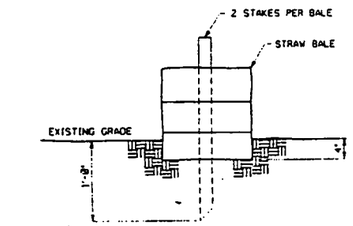
NOTES:
1. OVERLAP FABRIC AT JOINTS TO PREVENT LEAKAGE OF SILT AT SEAM.
2. SUB-CONTRACTOR MAY IN GENERAL USE EITHER SEDIMENT FENCE OR STRAW BALES INTERCHANGEBLY FOR SEDIMENT CONTROL WHERE INDICATED ON THE DRAWING.
3. SILT FENCE TO BE SEMILLAR TO AMOCO 2125.

TEMPORARY SILT FENCE DETAIL (3) REF C00237 C00233 C00234
NTS



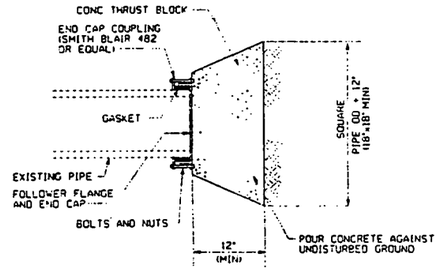
① ODOT ITEM 304 STABILIZED CRUSHED AGGREGATE (2-6" COURSES) ON FILTER FABRIC, ODOT ITEM 712.09, TYPE D.
② INSTALL STRAW BALE WHERE SHOWN ON DRAWINGS.
③ GRAVEL TO BE ODOT ITEM 501.07, TYPE D DUMPED ROCK. TOP WIDTH TO BE SAME AS STRAW BALES.

CHECK DAM DETAIL (4) REF C00237 C00233 C00234 C00235
NTS



NOTE:
1. STRAW BALES TO BE USED WHEN NATURAL GROUND IS LEVEL OR SLOPING AWAY FROM PROJECT.
2. PLACE STRAW BALES APPROXIMATELY PARALLEL TO BOTTOM OF FILL SLOPE AND AROUND THE CATCH BASINS INLETS.
3. STRAW BALES SHALL BE STANDARD SIZE 18"x18"x48".
4. FOR EROSION CONTROL MAINTENANCE SEE SPECIFICATIONS.

STRAW BALE BARRIER (5) REF C00237 C00233 C00234
NTS



END CAP (6) REF C00237 C00234
NTS

NOTE:
CONTRACTOR TO FIELD MEASURE EXIST PIPE OD BEFORE ORDERING CORRECT SIZE OF END CAP COUPLING.

NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI UNLESS NOTED OTHERWISE.

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00235	GRADING AND DRAINAGE PLAN - SHEET 3 OF 3

000021

REV NO	REVISION PURPOSE DESCRIPTION	BY	APPROVED	DATE
0	CERTIFIED FOR CONSTRUCTION	KS	N/A	5/30/96

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
DETAILS
SHEET 1 OF 2

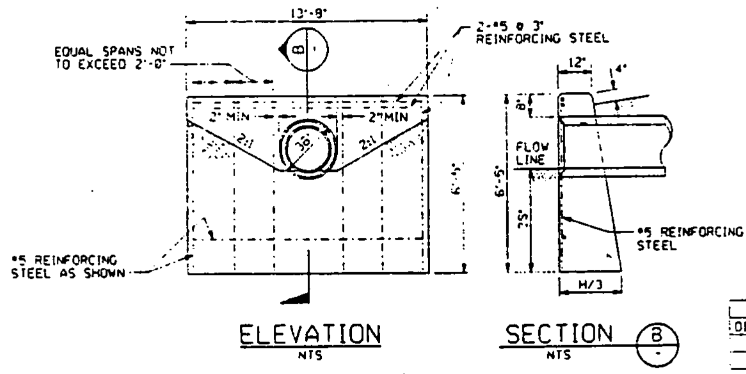
DRAWN BY	DATE	CHECKED BY	DATE
R. LINDGREN	04/02/96	K. GERARD	4/29/96

SCALE: NONE

SUBMITTED FOR APPROVAL: Kathryn W. Reed — DATE 5/30/96
FENCO QA APPROVAL: N/A — DATE
FERNALD PROJECT NUMBER: 10200

PREPARED UNDER FERNALD PROJECT SPEC NUMBER: WPRAP/P0167

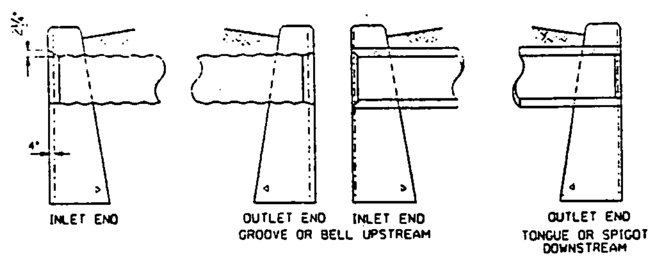
WBS NUMBER: 00-9075 | 91X-5900-G-00237 00005 | 0



DIMENSIONS		
DIAMETER	H	L
24"	5'-11"	11'-0"
36"	7'-0"	16'-4"

NOTES

1. CONCRETE SHALL BE ODOT CLASS "C". REINFORCING STEEL SHALL BE #5 AS SHOWN.
2. CHAMFER ALL EXPOSED CORNERS ¾ OF AN INCH.

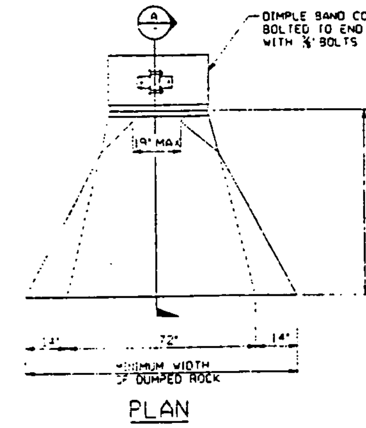


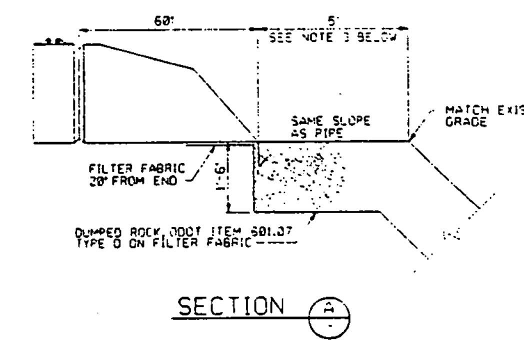
CORRUGATED PIPE RIGID PIPE

END TREATMENT AT HEADWALL

HEADWALL DETAIL (1) G00238 REF G00233 G00234 G00240

NTS

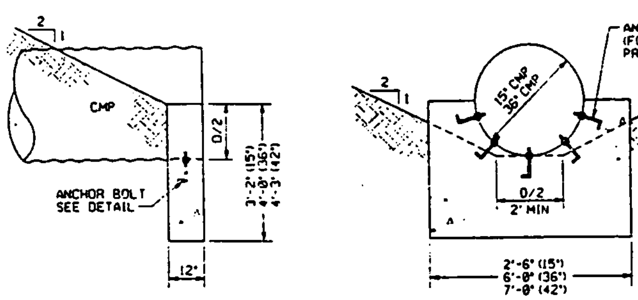


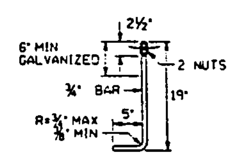


FLARED END DETAIL (2) G00238 REF G00233

NTS

1. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
2. MATERIAL TO BE GALVANIZED STEEL.
3. LENGTH OF DUMPED ROCK IS 5' UNLESS NOTED OTHERWISE ON GRADING AND DRAINAGE PLANS

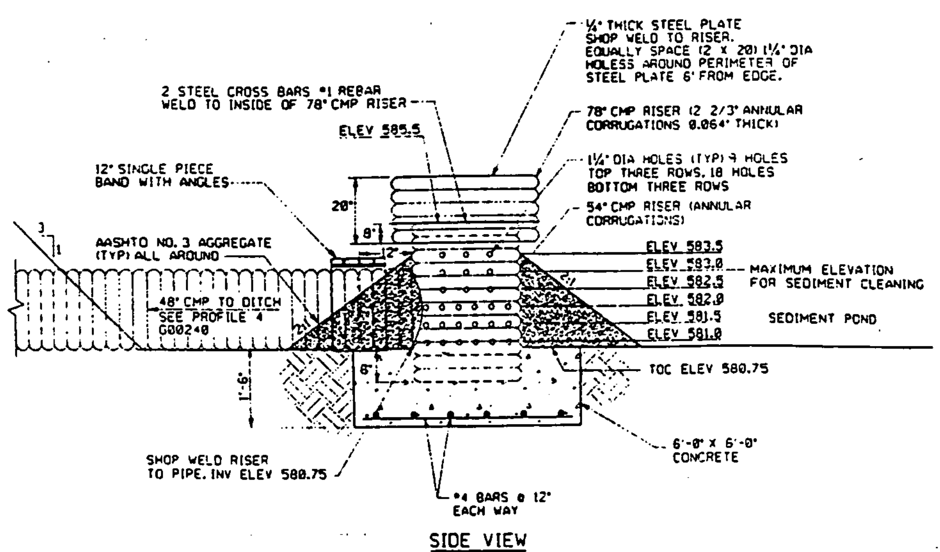




ANCHOR BOLT DETAIL

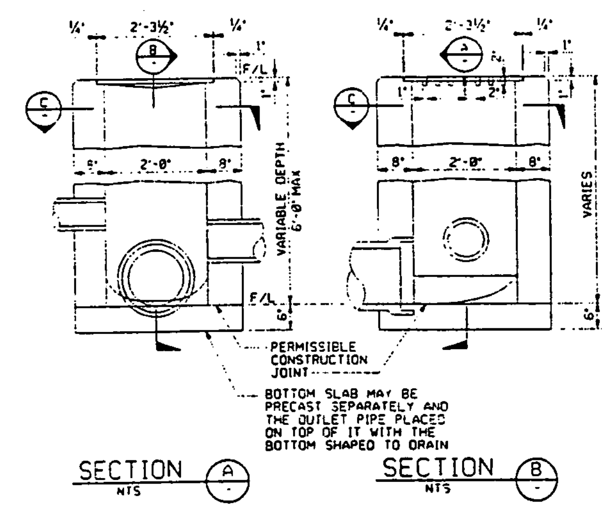
ENDWALL DETAIL (3) G00238 REF G00233 G00234

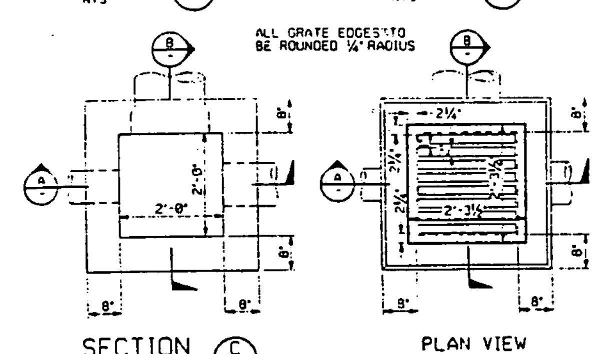
NTS



RISER PIPE DETAIL (4) G00238 REF G00234

NTS





ODOT 2-2B CATCH BASIN (5) G00238 REF G00234

NTS

NOTES:

1. LOCATION AND ELEVATION WHEN GIVEN ON THE PLANS OR PROFILE IS TOP CENTER OF THE GRATE.
2. GRATING - THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THE ONE SHOWN HEREON. WEIGHT OF GRATE, 20 LBS MINIMUM.
3. BRICK, CONCRETE BLOCK OR CAST-IN-PLACE WALLS HAVE A NOMINAL THICKNESS OF 8 INCHES. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES AND BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.
4. CONCRETE, CAST-IN-PLACE, TO BE CLASS C. ALL PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH 6 +/- 2% AIR VOID CONTENT IN THE HARDENED CONCRETE AND BE MARKED WITH CATCH BASIN NUMBER.
5. OPENINGS FOR PIPES SHALL BE O.D. +2" WHEN FABRICATED OR FIELD CUT.

NOTES

1. UNLESS OTHERWISE NOTED ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 1995.
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI UNLESS NOTED OTHERWISE.

REF DWG NO.	DRAWING TITLE
91X-5900-X-00306	DRAWING INDEX
91X-5900-X-00307	LEGEND AND SYMBOLS
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00240	STORM DRAIN PROFILE

000022

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION		N/A	5/31/96

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.

CINCINNATI, OHIO

PROJECT NAME

SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE

CIVIL
DETAILS
SHEET 2 OF 2

DRAWN BY: R. LINDGREN DATE: 03/28/96 LEAD ENGINEER: [signature] DATE: 5/30/96 CHECKED BY: K. FERARO

SCALE: NONE

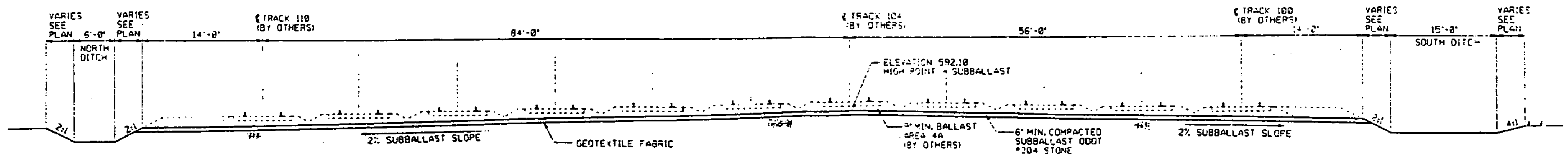
SUBMITTED FOR APPROVAL: Kathryn W. Rudel DATE: 5/30/96 FERMCO CRU APPROVAL: N/A FERMCO PROJECT NUMBER: 10200

PREPARED UNDER PARSONS PROJECT SHEET NUMBER: WPRAF/F0167

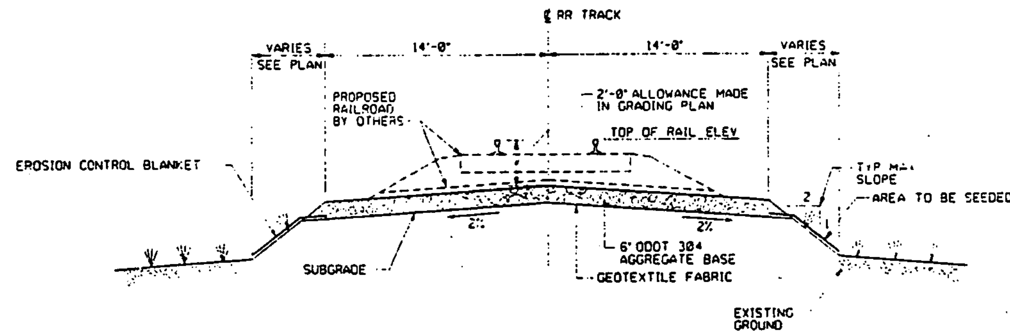
DOE PROJECT NO. / FERMCO PROJECT NO.: WBS 1.1.1.1.1.1 00-30701

DRAWING NUMBER: 91X-5900-G-00238 SHEET NO.: G0006 REV.: 0

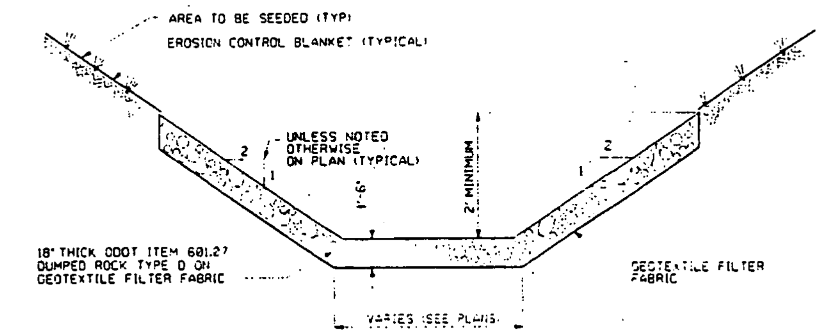
NOTES



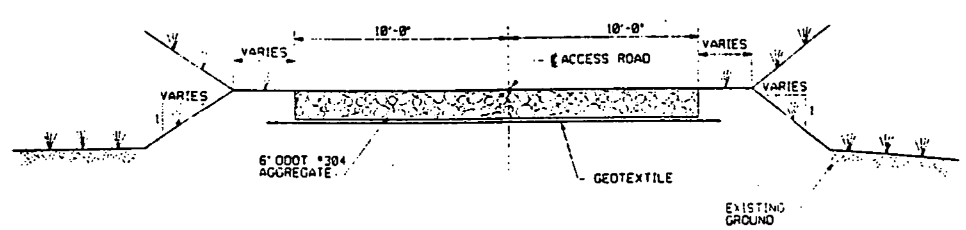
SECTION (A) REF G00239 G00235
RAILROAD YARD
NTS



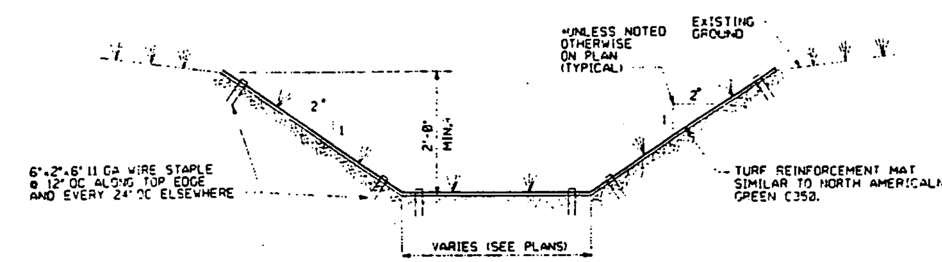
SECTION (B) REF G00239 G00233 G00234
RAILROAD SINGLE TRACK
NTS



FLAT BOTTOM DITCH DETAIL (3) REF G00239 G00233 G00234 G00235
NTS



GRAVEL ACCESS ROAD DETAIL (4) REF G00239 G00233 G00234
NTS



NOTE:
1. FOR DITCH INVERT ELEVATION SEE PLANS

SEEDED DITCH DETAIL (5) REF G00239 G00233 G00234 G00235
NTS

REF DWG NO.	DRAWING TITLE
91X-5900-X-20306	DRAWING INDEX
91X-5900-X-20307	LEGEND AND SYMBOLS
91X-5900-G-20233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-20234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-20235	GRADING AND DRAINAGE PLAN - SHEET 3 OF 3

000023

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION			
0	CERTIFIED FOR CONSTRUCTION		N/A	5/30/96

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. · PARSONS MAIN, INC. · ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

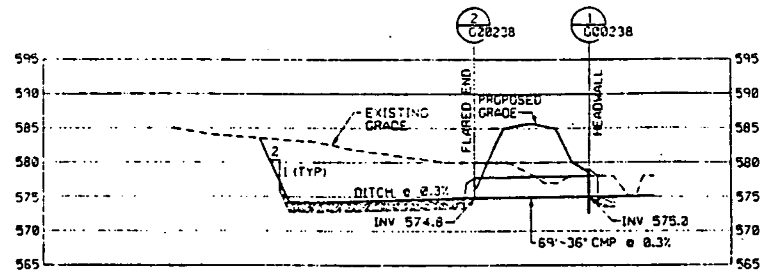
PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
DETAILS AND SECTIONS

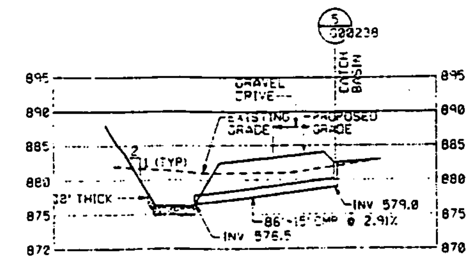
DRAWN BY: R. LINDGREN | DATE: 03/23/96 | CHECKED BY: F. GERARD | DATE: 4/28/96
SCALE: NONE
SUBMITTED FOR APPROVAL: Cathryn W. Rudd
FERMCO CRU APPROVAL: N/A
FERMCO PROJECT NUMBER: 10200

WPRAP/P0167 | 00-90701 | 91X-5900-G-00239 | G0007 | 0

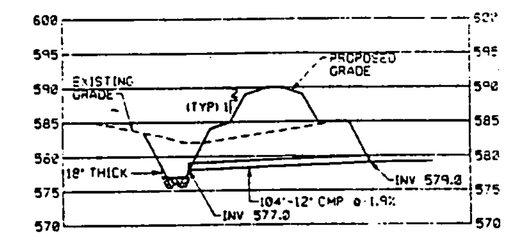
FE-306



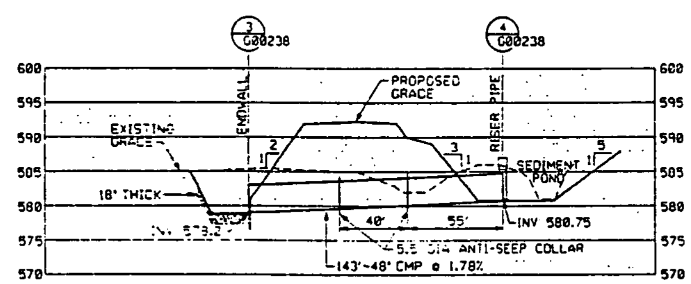
PROFILE (1) REF G00240 G00233
SCALE: HOR 1"=40' VER 1"=10'



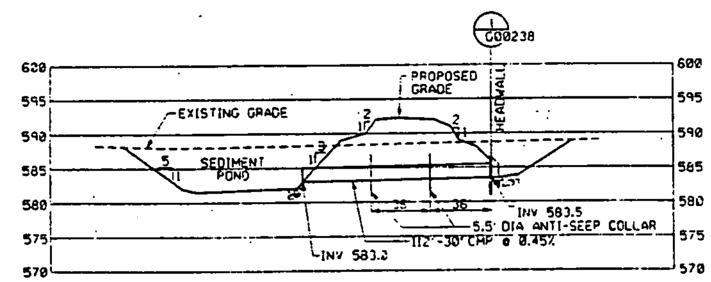
PROFILE (2) REF G00240 G00233 G00234
SCALE: HOR 1"=40 VER 1"=10'



PROFILE (3) REF G00240 G00234
SCALE: HOR 1"=40' VER 1"=10'



PROFILE (4) REF G00240 G00234
SCALE: HOR 1"=40' VER 1"=10'



PROFILE (5) REF G00240 G00234
SCALE: HOR 1"=40 VER 1"=10'

NOTES

REF DWG NO.	DRAWING TITLE
91X-5900-X-02306	DRAWING INDEX
91X-5900-X-20307	LEGEND AND SYMBOLS
91X-5900-G-00233	GRADING AND DRAINAGE PLAN - SHEET 1 OF 3
91X-5900-G-00234	GRADING AND DRAINAGE PLAN - SHEET 2 OF 3
91X-5900-G-00238	DETAILS - SHEET 2 OF 2

000024

REV. NO	ISSUE OR REVISION PURPOSE	A/E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	KO	N/A	5/30/96

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SITE RAIL SYSTEM IMPROVEMENTS
GRADING AND DRAINAGE PACKAGE

DRAWING TITLE
CIVIL
STORM DRAIN PROFILES

DRAWN BY R. LINDGREN

SUBMITTED FOR APPROVAL
A/E DATE 5/30/96
FERMCO N/A

PREPARED UNDER PARSONS PROJECT OPS # NUMBER: WPRAP/P0167
WBS 00-90